FY2013

LETTERKENNY ARMY DEPOT

Army Defense Environmental Restoration Program

Installation Action Plan

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Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multiyear cleanup program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern (AOC), and proposes a comprehensive, installation-wide approach, with the costs and schedules associated with conducting investigations and taking the necessary remedial actions (RA).

In an effort to coordinate planning information between the restoration manager, the US Army Environmental Command (USAEC), the Letterkenny Army Depot (LEAD), the US Army Aviation and Missile Command (AMCOM), the executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and tentative budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

Acronyms

AA	Ammunition Area (not NPL listed)
ACA	Army Contracting Agency
AEDB-R	Army Environmental Database - Restoration
AMC	Army Materiel Command
AMCOM	US Army Aviation and Missile Command
AOC	Area of Concern
ARARs	Applicable or Relevant and Appropriate Requirements
ARS	Arsenic Mitigation Technology
ASTs	Aboveground Storage Tank
Bldg	Building
BRAC	Base Realignment and Closure
BTAG	Biological Technical Assistance Group
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CERFA	Community Environmental Response Facilitation Act
CHPPM	Center for Health Promotion and Preventive Medicine
CMI(C)	Corrective Measures Implementation (Construction)
CMI(O)	Corrective Measures Implementation (Operation)
CMS	Corrective Measures Study
COC	Contaminant of Concern
CS	Confirmation Sampling
cy	cubic yard
DA	Disposal Area
DECC	Chambersburg - Defense Information Systems Agency
DERA	Defense Evaluation and Research Agency
DES	Design
DLA	Defense Logistics Agency
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
DSERTS	Defense Site Environmental Restoration Tracking System
EBPS	Enhanced Bioremediation Pilot Study
EE/CA	Engineering Estimate/Cost Analysis
EPRDA	East Patrol Road Disposal Area
ER,A	Environmental Restoration, Army
ERH	Electrical Resistivity Heating
ESD	Explanation of Significant Differences
FFS	Focused Feasibility Study
FOSL	Finding of Suitability to Lease
FOST	Finding of Suitability to Transfer
FRA	Final Remedial Action
FS	Feasibility Study
ft	feet (foot)
ft-msl	Feet - Mean Sea Level
FY	Fiscal Year
GIS	Geographic Information System
gpm	gallons per minute

Acronyms

GWAAP	Groundwater Assessment and Abatement Plan
GWTP	Groundwater Treatment Plant
GWTS	Groundwater Treatment System
HRS	Hazard Ranking System
IA	Interim Action
IAG	Interagency Agreement
IAP	Installation Action Plan
IC	Institutional Controls
IM	Interim Measure
IRA	Interim Remedial Action
IRP	Installation Restoration Program
ISCO	In Situ Chemical Oxidation
IW	Industrial Wastewater
IWTP	Industrial Water Treatment Plant
IWWS	Industrial Wastewater Sewers
K	thousand
LEAD	Letterkenny Army Depot
LF	Landfill
LIDA	Letterkenny Industrial Development Authority
LT3	Low Temperature Thermal Treatment
LTM	Long-Term Management
LUC	Land Use Control
LUCAP	Land Use Control Plan
MCL	Maximum Contaminant Level
MMR	Meghan Mackenzie Run
MNA	Monitored Natural Attenuation
MNR	Monitored Natural Recovery
MOA	Memorandum of Agreement
MR	Munitions Response
msl	Mean Sea Level
N/A	Not Applicable
NAPL	Non-Aqueous Phase Liquid
NFA	No Further Action
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
NSIA	Northern Southeast Industrial Area
OBP	Oil Burn Pit
OU	Operable Unit
PA	Preliminary Assessment
PADEP	Pennsylvania Department of Environmental Protection
PAH	Polynuclear Aromatic Hydrocarbon
PBA	Performance-Based Acquisition
PBC	Performance-Based Contract
PCB	Polychlorinated Byphenls
PDO	Property Disposal Office (the second area of LEAD placed on the NPL)

Acronyms

POL	Petroleum, Oil and Lubricants
PP	Proposed Plan
ppm	parts per million
PRG	Preliminary Remediation Goal
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RA	Remedial Action
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operation)
RAB	Restoration Advisory Board
RAD	Radioactive Waste or a Unit of Radiation Measure
RBC	Risk-Based Concentration
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RDX	Cyclotrimethylenetrimitramine
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Investigation
SAIC	Science Applications International Corporation
SE	Southeastern Area (the first area of LEAD placed on the NPL)
SI	Site Inspection
SIA	Southeast Industrial Area
SLERA	Screening Level Ecological Risk Assessment
SOO	Statement of Objectives
SOP	Statement of Purpose
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
SWQS	Surface Water Quality Standard
TAPP	Technical Assistance for Public Participation
TBD	To Be Determined
TBR	Transfer/Burning Revetments
TCA	1, 1, 1 Trichloroethane
TCE	Trichloroethylene
TI	Technical Impracticability
TMDE	Test, Measurement, and Diagnostic Equipment
TNT	Trinitrotoluene
TRC	Technical Review Committee
ug/l	microgram per liter
USAEC	US Army Environmental Command
USATHAMA	US Army Toxic and Hazardous Material Agency (currently called USAEC)
USEPA	US Environmental Protection Agency

Acronyms

USGS	US Geological Survey
UST	Underground Storage Tank
VIP	Vapor Intrusion Pathway
VOC	Volatile Organic Compound

Acronym Translation Table

CERCLA		RCRA
Preliminary Assessment(PA)	=	RCRA Facility Assessment(RFA)
Site Inspection(SI)	=	Confirmation Sampling(CS)
Remedial Investigation/Feasibility Study(RI/FS)	=	RCRA Facility Investigation/Corrective Measures Study(RFI/CMS)
Remedial Design(RD)	=	Design(DES)
Remedial Action (Construction)(RA(C))	=	Corrective Measures Implementation (Construction)(CMI(C))
Remedial Action (Operation)(RA(O))	=	Corrective Measures Implementation (Operation)(CMI(O))
Long Term Management(LTM)	=	Long Term Management(LTM)
Interim Remedial Action(IRA)	=	Interim Measure(IM)

Site Alias List

AEDB-R Site ID to Alias List

AEDB-R #	Alias
LEAD-009	SE OU 5
LEAD-010	PDO OU 4
LEAD-029	PDO OU2
LEAD-036	SE OU 9
LEAD-039	SE OU 12
LEAD-040	PDO OU 4
LEAD-044	PDO OU 4
LEAD-048	PDO OU 4
LEAD-050	AMMO
LEAD-052	SE OU 1
LEAD-053	AMMO
LEAD-076	SE OU 6
LEAD-077	PDO OU 2
LEAD-079	SE 0U 5
LEAD-081	SE OU 3A
LEAD-083	SE OU 2
LEAD-106	PDO OU 5
LEAD-107	PDO OU 5
LEAD-112	PDO OU 8
LEAD-131	SE OU 11
LEAD-132	SE OU 14

Installation Information

Installation Locale

Installation Size (Acreage): 18281
City: Chambersburg
County: Franklin
State: Pennsylvania
Other Locale Information

The LEAD is located in the central portion of Franklin County, Pennsylvania, five miles north of Chambersburg and 30 miles west of Gettysburg, Pennsylvania. It is in the Great Valley section of the Valley and Ridge physiographic province. This area, known locally as the Cumberland Valley, extends northeast to southwest across central Pennsylvania.

The LEAD straddles two major structural features, the South Mountain anticlinorium to the east and the Massanutten synclinorium to the west. The five formations occurring at LEAD are a shale formation known as the Martinsburg Formation (which is not karstic). The limestone formations are the Chambersburg Formation and the St. Paul Group, the limestones and dolomites of the Rockdale Run Formation, and the dolomites of the Pinesburg Station Formation. These geologic formations are karstic, fractured, and deformed to varying extents due to past geologic activity.

The geologic units and their associated deformational features control the direction and rate of groundwater movement at LEAD. The potentiometric surface reflects the topography in a subdued manner, creating groundwater divides and basins coincident with the topography and surface water divides and basins. The Property Disposal Office (PDO) area is cut by two major fault structures, the Letterkenny Fault and the Pinola Fault, and at least two unnamed faults.

The installation originally covered 19,243 acres and is situated on the western side of the Cumberland Valley that is characterized by gently rolling terrain underlain by folded and faulted geologic formations. A total of 1,235 acres are to be excessed through Base Realignment and Closure (BRAC). To date a total of 833 acres has already been transferred under BRAC Phases I, II, III, IV and the Air Hill Parcel. In addition, the Letterkenny Reservoir, which comprises 129 acres, has also been transferred as part of a utilities privatization initiative.

Installation Mission

The mission of the LEAD is to deliver superior maintenance, manufacturing, logistics, life cycle support and service worldwide to the Joint Warfighter and our International Partners.

Lead Organization

Army Materiel Command (AMC)

Lead Executing Agencies for Installation

Mission & Installation Contracting Command, Ft. Sam Houston

Baltimore District Corps of Engineers

Regulator Participation

Federal	US Environmental Protection Agency (USEPA) Region 3
State	Pennsylvania Department of Environmental Protection (PADEP), Environmental Cleanup Program

National Priorities List (NPL) Status

A score of 37.5 was recorded on 01-JUL-87.

Date for RA(C) Completion: 201509

Date for NPL Deletion: TBD

Installation Information

Installation Restoration Advisory Board (RAB)/Technical Review Committee (TRC)/Technical Assistance for Public Participation (TAPP) Status

RAB established 199605

Installation Program Summaries

IRP

Primary Contaminants of Concern: Dioxins/Dibenzofurans, Explosives, Metals, Petroleum, Oil and Lubricants (POL), Polychlorinated Biphenyls (PCB), Semi-volatiles (SVOC), Volatiles (VOC)

Affected Media of Concern: Groundwater, Sediment, Soil, Surface Water

5-Year / Periodic Review Summary

5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	201103	201203	2012
Complete	200602	200609	2006
Complete	200110	200110	2002
Planned	201603	201703	2017

Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
AREA SE OU 1: K AREA CONTAMINATED SOILS	LEAD-052
DD, PDO Playground Soils, LEAD-089	LEAD-089
DD,PDO OU3 Mercury Detect Rocky Spring L	LEAD-064, LEAD-067, LEAD-070
Firemen's Training Area Removal Action	LEAD-063
Phase I Parcels	LEAD-027, LEAD-119
Phase II Parcels	LEAD-119, LEAD-125, LEAD-126
Phase III Parcel	LEAD-011, LEAD-110, LEAD-114
Phase IV Parcels	LEAD-016, LEAD-115
ROD, SE OU 10 Groundwater	LEAD-101, LEAD-128
ROD, SE OU 2 - IWWS & Contaminated Soils	LEAD-074, LEAD-083
ROD, SE OU 4 Stormwater Sewers	LEAD-032, LEAD-034, LEAD-073

Results The remedies for SE OUs 1, 2, 7, portions of 8 and 10 and portions of PDO OU6 are functioning as designed, are protective of human health and the environment, and are being operated and maintained in an appropriate manner.

Actions SE OU1 - Implement maintenance plan, conduct annual cap inspection. SEOU2 - Complete LUC rpts. Incl LUCs in the LUC RD for SEOUs 2, 7, 8 and PDO OU6. SEOU10 - con't monitoring. PDO OU6 - EnsureGW restrictions are in RODS and RDs for PDO OUs 2, 4.

Plans Another five-year review will be conducted in FY17

Recommendations and Implementation Plans:

SE OU 1
-Perform activities specified in maintenance plan: inspect sign integrity and mow cap at least once per year.
-Animal burrows have been observed during the past two cap inspections. Traps have been effective at removing burrowing animals and will continue to be used. Existing holes will be filled in to determine if new holes are being created.
-Revise vegetative cover statement of purpose (SOP) to require annual cap inspection instead of quarterly inspection.

SE OU 2
-Ensure completion of annual LUC inspection reports.
-Include SE OU 2 LUCs in the LUC RD for Phases I, II, and V.

SE OU 7
-Include SE OU 7 LUCs in the LUC RD for Phases I, II, and V.

SE OUs 2, 7, 8, and PDO OU 6
-Complete LUC RD for Phases I, II, and V before the LUCAP MOA expires in August 2012.

SE OU 10
-Continued monitoring of site conditions.

5-Year / Periodic Review Summary

Recommendations and Implementation Plans:
PDO OU 6 -Ensure groundwater restrictions at PDO OU 6 sites are incorporated into the RODs and RDs for PDO OUs 2 and 4; ensure RDs are completed before the LUCAP memorandum of agreement (MOA) expires in August 2012.

Land Use Control (LUC) Summary

LUC Title: LEAD-039 LUC Work Plan

Site(s): LEAD-039

ROD/DD Title: ROD, AMMO Landfill 5 (64-?) (Area G) Sec

Location of LUC

Landfill and surrounding area is restricted to commercial/industrial use per the Letterkenny Master Plan.

Immediate boundary of the landfill will have a 2-foot soil cover. Landfill area will be restricted from any activity that can disturb the cap.

Land Use Restriction: Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system, Landfill restriction - Prohibit excavation on LF cap or cover system, Restrict land use - No residential use

Types of Engineering Controls: Signs

Types of Institutional Controls: Notations in Master Plan

Date in Place: 201209

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS

Additional Information

N/A

LUC Title: LEAD-050 LUC Work Plan

Site(s): LEAD-050

ROD/DD Title: ROD, AMMO TNT Washout plant

Location of LUC

Entire site is restricited to commercial/industrial use per the Letterkenny Master Plan.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Notations in Master Plan

Date in Place: 201209

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS

Additional Information

N/A

Land Use Control (LUC) Summary

LUC Title: LEAD-053 LUC Work Plan

Site(s): LEAD-053

ROD/DD Title: ROD, AMMO Burning Ground 2 (SWMU 58)

Location of LUC

Site and area surrounding the site are restricted to commercial/industrial use per the Letterkenny Master Plan.

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Notations in Master Plan

Date in Place: 201209

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS

Additional Information

N/A

LUC Title: LEAD-079 LUC Work Plan

Site(s): LEAD-079

ROD/DD Title: ROD, SE OU 5, Areas A & B

Location of LUC

Area A is located within Letterkenny Industrial Area which is limited to commercial/industrial use per the Letterkenny Master Plan.

Land Use Restriction: Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system, Landfill restriction - Prohibit excavation on LF cap or cover system, Restrict land use - No residential use

Types of Engineering Controls: Signs

Types of Institutional Controls: Notations in Master Plan, Restrictions on land use

Date in Place: 201501

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS, PAH, VOC

Additional Information

N/A

LUC Title: PDO OU 4 LUC RD

Land Use Control (LUC) Summary

Site(s): LEAD-040, LEAD-044, LEAD-048, LEAD-112

ROD/DD Title: PDO OU 4 - OIL BURN PIT, LEAD-010

Location of LUC

PDO OU 4 is located within Industrial Area which is restricted to commercial/industrial use per the Letterkenny Master Plan.

Land Use Restriction: Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system, Landfill restriction - Restrict construction of buildings that may interfere with LF cap or cover system, Restrict land use - No residential use

Types of Engineering Controls: Markers

Types of Institutional Controls: Restrictions on land use

Date in Place: 201306

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: DIOXINS/DIBENZOFURANS, METALS, PCBs, VOC

Additional Information

N/A

LUC Title: ROD - IWWS & Cont. Soil

Site(s): LEAD-074, LEAD-083

ROD/DD Title: ROD, SE OU 2 - IWWS & Contaminated Soils

Location of LUC

Southeastern Area Operable Unit 2 (SE OU 2)
Industrial Wastewater Sewers and Associated Contaminated Soils

Land Use Restriction: Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Notations in Master Plan, Restrictions on land use

Date in Place: 200608

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: VOC

Additional Information

N/A

LUC Title: ROD K Areas Cont. Soils

Site(s): LEAD-052

Land Use Control (LUC) Summary

ROD/DD Title: AREA SE OU 1: K AREA CONTAMINATED SOILS

Location of LUC

The K Areas K-1, K-2 and K-3 are located in the Southeast area of the depot.

Land Use Restriction: Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system, Landfill restriction - Prohibit excavation on LF cap or cover system, Landfill restriction - Prohibit installation of utility system lines through the site

Types of Engineering Controls: Markers, Signs

Types of Institutional Controls: Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on land use

Date in Place: 199108

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews, Markers

Contaminants: VOC

Additional Information

N/A

Cleanup Program Summary

Installation Historic Activity

LEAD was established in 1942 with the primary mission of ammunition storage. Other principal activities at LEAD have included overhauling, rebuilding, and testing of wheeled and tracked vehicles; issuing and shipping industrial chemicals and petroleum; and storing, maintaining, demilitarizing, and modifying ammunition.

Operations conducted at LEAD, in conjunction with prior and current missions, have included cleaning and stripping, plating, lubricating, demolishing, transferring and storing chemicals and petroleum and washout/deactivation of ammunition. Several of these activities involved the use of significant quantities of chlorinated hydrocarbons, solvents, and petroleum, oil and lubricants (POL). Machining, plating and painting operations produced metallic residues that were disposed of on-site.

The Ammunition Area (AA), which occupies the majority of the land at LEAD, is used to store ammunition. The industrial area is used for warehousing operations and repairing and rebuilding of Army wheeled vehicles.

As the center of industrial and technical excellence for air defense and tactical missile systems, LEAD continues a tradition of supporting our Soldiers and our Army for over 70 years. LEAD repairs a variety of Department of Defense (DoD) missile systems. The LEAD is the Premier DoD Center of Industrial and Technical Excellence for Air Defense and Tactical Missile Ground Support Equipment, Mobile Electric Power Generation Equipment, Route Clearance Vehicles and PATRIOT Missile Recertification.

Comprising over 17,000 acres, the Ammunition Area of the depot is used to conduct maintenance, modification, storage and demilitarization operations on tactical missiles and ammunition. On occasion, LEAD partners with industry to allow the advantage of its unique capabilities and skills.

LEAD is under the command structure of AMCOM. It is a government-owned, government-operated installation. Its location in south central Pennsylvania provides easy access to seaports, air travel and major highways.

Installation Restoration Program (IRP) efforts at LEAD were initiated in 1978 when an installation assessment was performed. Past operations and practices at LEAD have resulted in the generation of various types of contaminants and their disposal or release across the installation. Solvents, heavy metals, petroleum hydrocarbons, and polychlorinated biphenyls (PCBs) are the primary contaminants of concern (COCs). Letterkenny has signed agreements with the federal and state regulators and has established a procedural framework to implement and monitor appropriate response actions at the facility in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), the National Oil and Hazardous Substances Pollution Contingency Plan, Superfund guidance and policy, the Resource Conservation and Recovery Act (RCRA) guidance and policy, and state statutes. Letterkenny has entered into a partnership with all stakeholders in the restoration and cleanup of environmental responsibilities from past operations.

LEAD's IRP objectives are to:
- take a management approach that is strongly geared toward incorporating the opinions of all parties in the decision-making process; therefore, LEAD achieves a consensus before initiating any actions.
- conduct community relations activities which include public meetings, review and coordination meetings with federal and state regulatory personnel, site visits, meetings with elected officials and community groups, news releases to the local media, and direct contact with nearby property owners.
- partner so as to maximize the use of limited resources (LEAD partnered with regulatory agencies and community representatives, guiding the team through complicated negotiations and groundbreaking regulatory and technical issues), and
- use innovative technologies in an attempt to streamline and determine the most cost-effective method for cleanup (Information from such pilots and projects is posted on LEAD's environmental website for dissemination to the regulators, restoration advisory board [RAB] members and local authorities in an effort to share lessons learned. The website is password protected).

LEAD supports local small businesses including local construction companies, local drillers, surveyors, nearby local stores, and local hotels. The majority of our contractors are headquartered in Pennsylvania.

As part of the installation's regulatory status there are two National Priorities List (NPL) sites on the installation: the Southeastern (SE) Area and the Property Disposal Office (PDO) Area. The SE Area was listed in 1987 with a hazard ranking system (HRS) score of 34.21. The PDO Area was listed in 1989 with HRS score of 37.51 (Federal Facilities List). On Feb. 3, 1989 a Federal Facilities Interagency Agreement (referred to as the IAG) was signed by the Army, EPA, and PADEP, which laid the groundwork for the CERCLA and RCRA action at LEAD. The IAG divided LEAD in to three areas for the purpose of environmental

Installation Historic Activity

investigation:

- SE Area comprised of the Southeast Industrial Area (SIA) and the Disposal Area (DA)
- PDO Area
- Ammunition Area (AA)

Portions of both NPL sites are located on both the installation and BRAC property. CERCLA investigations have been completed in the AA (NPL).

There are a number of reasons for LEAD's inclusion on the NPL. The SE Area is included because groundwater beneath the Southeast Industrial Area (SIA) of the depot, as well as beneath an off-depot area of approximately 4,000 acres, extending at least two miles to the east, is contaminated with chlorinated organic chemicals. Off-post VOC contamination includes various springs with Rowe Spring being the primary spring of concern. Soil on the installation has been found to be contaminated with chlorinated organic chemicals, including volatile organic compounds (VOCs). Individuals may be at risk if they accidentally ingest, inhale vapors, or come in direct contact with contaminated groundwater or soil, or consume fish from contaminated areas.

According to tests conducted by the Army, groundwater beneath the PDO area and PDO surface water, including Rocky Spring Lake, are contaminated with low levels of chlorinated organic chemicals including trichloroethylene (TCE) and PCBs. The soils have been contaminated by xylene, heavy metals, chloroform, and other VOCs. Residential wells are not known to be impacted by this site, but could be threatened.

LEAD is currently monitoring groundwater height at the PDO boundary to verify that VOC contaminated groundwater is not currently migrating off- post.

Operations conducted at LEAD, in conjunction with prior and current missions, have included
- cleaning and stripping,
- plating,
- lubrication,
- demolition,
- chemical and petroleum transfer and storage, and
- washout/deactivation of ammunition.

Several of these activities involved the use of significant quantities of chlorinated hydrocarbons, solvents and POL. Machining/plating/painting operations produced metallic residues that were disposed of on-site.

On Aug. 30, 2007, the Army awarded a performance-based contract (PBC) to Weston Solutions of West Chester, Pennsylvania. The contract requires environmental remediation services for all sites at LEAD, located at Chambersburg, Pennsylvania. The contractor will be responsible for conducting required environmental restoration services for which the US Department of the Army is statutorily responsible. They will address any and all unforeseen environmental, scheduling, and regulatory issues and assume contractual liability and responsibility for achievement of the performance objectives for the cleanup sites at LEAD andany sites with off-installation contamination for which the Army is responsible. The specific objectives of this contract are set forth in a performance work statement and in accordance with the contractor's proposal and task orders.

The contract concludes at the end of December 2014.

Installation Program Cleanup Progress

IRP

Prior Year Progress: BRAC:
- Complete lower PDO ROD: covers PDO OU 6.

Environmental Restoration Army (ER,A):
- Complete lower PDO ROD: covers PDO OU 2 and 5.

Future Plan of Action: BRAC and ER,A:
- Install two-foot landfill covers at landfill sites LEAD-036, 037, 039, 040, and 079

Cleanup Program Summary

BRAC:
- Complete PP, ROD, FOST for Phase VI & VII parcels and transfer parcels.

ER,A:
- Complete the PP, ROD and RD for the on-and off-post VOC contaminated groundwater (SE Operable Unit (OUs) 3A, 6, and 11). Implement remedy of in situ chemical oxidation.

- Complete PP and ROD for PDO OU 4. Implement remedy of electrical resistivity heating at PDO OU 4.

LETTERKENNY ARMY DEPOT

Army Defense Environmental Restoration Program
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 80/59

Installation Site Types with Future and/or Underway Phases

2 Burn Area
(LEAD-010, LEAD-053)
4 Contaminated Ground Water
(LEAD-076, LEAD-077, LEAD-081, LEAD-131)
1 Contaminated Sediments
(LEAD-107)
1 Contaminated Soil Piles
(LEAD-132)
1 Disposal Pit/Dry Well
(LEAD-048)
1 Fire/Crash Training Area
(LEAD-009)
5 Landfill
(LEAD-036, LEAD-039, LEAD-040, LEAD-052, LEAD-079)
3 Storage Area
(LEAD-044, LEAD-106, LEAD-112)
1 Surface Impoundment/Lagoon
(LEAD-029)
1 Waste Lines
(LEAD-083)
1 Waste Treatment Plant
(LEAD-050)

Most Widespread Contaminants of Concern

Dioxins/Dibenzofurans, Explosives, Metals, Petroleum, Oil and Lubricants (POL), Polychlorinated Biphenyls (PCB), Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern

Groundwater, Sediment, Soil, Surface Water

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
LEAD-063	FIREMEN'S TRAINING AREA (1983)	FRA	WASTE REMOVAL - SOILS	1991
LEAD-062	GUILFORD ALTERNATE WATER SYSTEM, OFFPOST	IRA	ALTERNATE WATER SUPPLY/WATER SUPPLY TREATMENT	1992
LEAD-013	IWTP LAGOONS/AREA D/BLDG 360	FRA	THERMAL DESORPTION	1993
LEAD-079	WASTE DISPOSAL TRENCHES AREA A	IRA	REMOVAL	1996
LEAD-032	INDUSTRIAL WASTE DITCH (ROWE RUN)	IRA	REMOVAL	1997
LEAD-074	INDUSTRIAL SEWERS - IR	IRA	WASTE REMOVAL - SOILS	1997
LEAD-083	INDUSTRIAL WASTE SEWERS-SOILS - IR	IRA	WASTE REMOVAL - SOILS	1997
LEAD-105	SPILL SITE WITHIN AREA A	IRA	WASTE REMOVAL - SOILS	1997
LEAD-052	DISPOSAL AREA TRENCHES (AREA K)	FRA	CAPPING	1998
LEAD-052	DISPOSAL AREA TRENCHES (AREA K)	FRA	OTHER	1998
LEAD-010	OIL BURNING PIT	IRA	CHEMICAL REDUCTION/OXIDATION	1999

IRP Summary

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
LEAD-106	DRMO SCRAPYARD - PCB'S, METALS, ASBESTOS	IRA	REMOVAL	2000
LEAD-107	ROCKY SPRING PCB SEDIMENTS	IRA	REMOVAL	2000
LEAD-036	LANDFILL 2 (48-52) (AREA J)	IRA	REMOVAL	2001
LEAD-039	LANDFILL 5 (64-?) (AREA G), SECURITY	IRA	WASTE REMOVAL - SOILS	2008
LEAD-048	TRANSFER/BURNING REVETMENTS	IRA	WASTE REMOVAL - SOLIDS (NON-SOILS)	2008
LEAD-050	TNT WASHOUT PLANT	FRA	INSTITUTIONAL CONTROLS	2013
LEAD-053	BURNING GROUND 2 (SWMU 58)	FRA	INSTITUTIONAL CONTROLS	2013

Duration of IRP

Date of IRP Inception: 197901

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201510/204509

Date of IRP completion including Long Term Management (LTM): 204601

IRP Contamination Assessment

Contamination Assessment Overview

The conclusion based on findings presented in the 1980 US Army Toxic and Hazardous Material Agency (USATHAMA) report was that the materials associated with LEAD activities, past disposal practices, and the complex nature of the hydrogeologic regime offered significant potential for environmental contamination and contaminant migration.

In 1983, volatile organic hydrocarbon contamination of groundwater was confirmed in the southeastern area of LEAD. In July 1987, the Southeast Area of LEAD was listed on the NPL (with an HRS score of 34.21). In March 1989, the PDO Area at LEAD was added to the NPL list of federal facilities (with an HRS score of 37.51). On Feb. 3, 1989, a federal facility IAG was signed, which laid the groundwork for the CERCLA and Resource Conservation and Recovery Act (RCRA) actions at LEAD. A comprehensive RI was produced for each site. The USEPA is the lead regulator at LEAD for CERCLA response actions. The Pennsylvania Department of Environmental Protection (PADEP) signed the IAG due to the RCRA-regulated closure of the industrial water treatment plant (IWTP) lagoons. For the purpose of environmental investigation the IAG divided LEAD into three areas:

- the SE area [composed of the SE Industrial Area (SIA) and the Disposal Area (DA)]
- the PDO area, and
- the AA

The SE Area and the PDO Area are NPL sites. The AA is used for the storage, repair, testing, and disposal of ammunition. LEAD is currently conducting RI/risk assessments under the authority of CERCLA.

The total of VOCs at concentrations greater than 100 micrograms per liter (ug/L) were found in groundwater at the LEAD boundary near the DA, with the predominant contaminant being 1,1 dichloroethane. Results indicated that contaminants had crossed the LEAD boundary east of the DA and north of Gate 6. In 1983-1984 the Army provided an alternative water supply where required.

In 1984, a determination was made that the DA area contained at least six major areas of VOC contamination and/or high levels of heavy metals. These areas exhibited volatile organic constituents in excess of 100 parts per million (ppm). Three of these areas were confirmed to have VOC contamination in the groundwater.

In 1983, volatile chlorinated hydrocarbons were found at significant concentrations in the groundwater, in stream sediments, and in the soil in the Property Disposal Office (PDO) groundwater contamination with VOCs was estimated to extend approximately two miles from the oil burn pit to Rocky Spring Lake. Rocky Spring was identified as the major discharge point of the VOC contaminated groundwater in the PDO drainage area. In 1986, another study confirmed that Rocky Spring is the single discharge point of all contaminated groundwater in the PDO drainage area. This study also found that low levels of VOCs were migrating off-post via surface water discharged from Rocky Spring Lake.

In 1995, during an attempt to fill the PDO oil burn pit (OBP) to grade, a black oily sludge was observed oozing from the bottom of the pit. The fill operation was halted and the side of the OBP was cut down to allow a boring rig access to the site. Two soil borings indicated high levels of trichloroethane underneath the OBP area. A high density liner was placed over this site as an emergency stabilization measure. During 1996, a decision was made to do an emergency delineation and subsequent removal at the OBP. Delineation borings and geotechnical borings were completed in August 1996 with a removal soon to follow after finalization of analytical results. Inclement winter weather prevented the removal in 1996. Remedial actions (RAs) proceeded during 1997 and 1998. In situ hydrogen peroxide was used to destroy the remaining free-product at the OBP.
An FS is currently underway to evaluate remedies for addressing remaining groundwater contamination. This site [PDO operational unit (OU) 4] is being addressed under the CERCLA program. The groundwater underneath the PDO is contaminated with VOCs above applicable or relevant and appropriate requirements (ARARs). The RI concluded that PDO VOC-contaminated groundwater does not bypass Rocky Spring Lake. Occasionally, the surface water leaving LEAD has exceeded ARARs for VOCs.

In 1991, two surface water mercury detections from Rocky Spring Lake were above surface water standards. A sampling program was initiated that involved the bi-monthly collection of surface water, algae, and fish from Rocky Spring Lake. The Army developed a method to detect mercury down to 0.05 parts per billion in water and tissue. Soil samples, surface water, and groundwater samples were collected from the site. In June 1995, the Army published the final version of the "Addendum to the Remedial Investigation of the PDO Area (OUs 1 and 2) At LEAD Mercury Detections in Rocky Spring Lake." This addendum concluded that the 1991 detections of mercury in Rocky Spring Lake were a result of the severe drought of 1991, during which the water level in the lake dropped below that of the spillway. The only exit point of water from the lake was from the control structure in the dam, and the fact that Rocky Spring Lake has always had an overabundance of nutrients in it. Every year there

Contamination Assessment Overview

are algae blooms in the summer.

During periods of normal lake levels, a large amount of algae is removed from the lake when water flows over the spillway.

During the 1991 drought, algae was not removed from the lake by surface flow over the spillway. When algae died in late summer, large amounts of mercury were released. The 1992 investigation documented that the algae contained approximately 106 times as much mercury as the surface water.

The following section describe the major IRP concerns.

Site SE OU 3A:
Groundwater contamination is addressed on post VOC contamination (LEAD-081). This OU has been broken down into two sections based on SE groundwater divides: 3A (Active), the DA; and 3B (BRAC), the groundwater upgradient of the SE. There are other areas in the SE area that are being handled are under BRAC.

The VOC-contaminated groundwater from this area discharges into these six springs located approximately two miles off-post. These are the primary receptors.
- Rowe Spring,
- Helman Upstream,
- Helman Downstream,
- Nelson 1,
- Nelson 2 and
- Witmer Spring

In the DA, 15,000 cubic yards (cy) of VOC-contaminated soil were removed without visible effect on groundwater quality (K Area). The majority of the contamination still remains in the bedrock matrix. In July 1999, a peroxide injection pilot study was completed. Earlier pilot studies of recirculation and in situ stripping were not as effective as the peroxide injection. Groundwater at this site impacts property potentially identified for early transfer under BRAC.
Site SE OU 6:
Various activities and past practices at LEAD have contaminated the SE on and off-post groundwater with VOCs. SE OU 6 was created in 1993 to address the off-post groundwater. On-post groundwater is addressed by sites SE OU 3A and 11.

Rowe Run Drainage:
The former IWTP lagoons (LEAD-013) were closed under RCRA. As required by Pennsylvania State Law (RCRA), a groundwater assessment and abatement plan (GWAAP) were prepared. The draft GWAAP recommended the following response actions:
- groundwater monitoring
- source soils removal
- groundwater treatment
- treatment of Rowe Spring (off-post)

By 1993, the Army had completed groundwater monitoring, source soils removal, and, groundwater treatment. In 1993, a flow study of Rowe Spring (LEAD-068) commenced. A series of stream monitoring stations were installed above and below Rowe Spring to accurately measure spring flow. A final (99 percent confidence interval) flow of 1,680 gallons per minute (gpm) has been established for Rowe Spring. Helman (LEAD-086), Helman East (LEAD-087), and Witmer Spring (LEAD-088) contribute another 1,600 gpm. Nelson spring (LEAD-096) and Nelson spring East (LEAD-104) are ephemeral springs that contribute up to 200 gpm in periods of high groundwater. In June 1996 a conceptual design for the Rowe Spring groundwater treatment plant was produced. In 1998, property acquisition was completed. A final design was produced in 1999. In June 2000, a pilot study using micro bubble in situ stripping was completed.

Site SE OU 11:
The original unlined lagoon was constructed in 1954 and operated until 1967. The lagoon was used as a settling/equalization basin for the IWTP. Over time, this process led to the generation of a sludge layer in the lagoon. Releases of sludge and untreated wastes from the unlined lagoon had been occurring for an unspecified time. In 1967, a concrete-lined, two-cell lagoon was built over the existing bare earth lagoon. In 1992, the soil in the lagoon area was excavated and treated. The groundwater

Contamination Assessment Overview

below the lagoon area is contaminated with VOCs. This on-post VOC-contaminated groundwater migrates off-post (see southeast OU 6) and eventually it discharges into Rowe Spring. In the Northern southeast Industrial Area (NSIA) (lagoon), 30,000 cy of VOC- contaminated soil were removed to bedrock, treated with low temperature thermal treatment (LT3) technology and returned; however, groundwater contamination still persists. A pilot study (aqueous ozone injection) was completed in November 1999 did not prove to be effective. The most common VOCs in the lagoon area are: chloroform, 1,2-dichloroethane, 1,1 dichloroethene, cis- and trans- 1,2 dichloroethene, methylene chloride, trichloroethene, and vinyl chloride.

In winter 2001, a pilot study was completed to determine the feasibility of remediating VOCs in the groundwater at the lagoons using in situ chemical oxidation (i.e., O3 - peroxone). The remedial strategy that was pilot-tested is based on in situ treatment of the VOC contaminated source bedrock with pressurized O3. The pressurized O3 increased the concentration of oxidant at the bedrock surface. Active remediation (i.e., oxidant introduction) would occur over a period of approximately three years. The oxidant distribution system is designed to place the oxidant solution specifically in the portions of the aquifer where groundwater passing through comes in contact with the aquifer matrix. This potential treatment alternative was evaluated along with other alternatives in the focused feasibility study (FFS) completed in 2010.

Cleanup Exit Strategy

The end point criteria for SE OU 11 are as follows:
- The FFS was developed with a front-end Technical Impracticability (TI) waiver for groundwater at SE OUs 3A, 6, and 11 has been prepared.
- The pressurized O3 injection program would be implemented until either three years of full-scale continuous treatment (including rebound monitoring) are completed or TCE concentrations at well 95-NSIA-4 stabilize at or below 867 ug/L. Based on concentration versus distance plots, achieving the 867 ug/L concentration at well 95-NSIA-4 is likely to achieve a TCE concentration at Rowe Spring meeting the surface water quality standard (SWQS) criteria of 2.7 ug/L.
- At the point in time when concentrations of TCE decline and remain below the human health SWQS of 2.7 ug/L at Rowe Spring for four successive semiannual sampling events, the surface water sampling program will be discontinued.
- At the point in time when VOC concentrations in wells 89-2, 89-4 and 93-5 decline and remain below their respective maximum contaminant levels (MCLs) for four successive semiannual sampling events, the semiannual groundwater sampling of on-post and off-post wells will be discontinued.

The Army proposes to implement in situ chemical oxidation (ISCO) with land use controls (LUCs) and long-term monitored natural attenuation (MNA) sampling as the alternate remedial strategy (ARS), with the goal of destroying contaminant mass at the TI zones in SE OUs 3A and 11 and meeting ARARs in the dissolved-phase plume. The proposed ARS would protect human health and the environment through the implementation of ISCO, which would destroy contaminant source zone mass with a potential resultant decline in the dissolved phase VOC concentrations in both groundwater and surface water springs (in SE OU 6).

IRP Previous Studies

	Title	Author	Date
1980			
	Installation Assessment of LEAD	LEAD, USATHAMA	JAN-1980
1983			
	Engineering Report Study of Hazardous Discharges, LEAD, Waste Disposal/Sites	Mason and Hanger	AUG-1983
	Environmental Contamination Survey of LEAD SE Industrial Area, Waste	Battelle, Pacific Northwest Laboratories	SEP-1983
	Environmental Contamination Survey, Waste Disposal/Sites	Battelle, Pacific Northwest Laboratories	SEP-1983
	Environmental Contamination Survey, Exploratory, Confirmatory Phases, Waste Disposal/Sites	Battelle, Pacific Northwest Laboratories	OCT-1983
1984			
	LEAD Remedial Investigation Feasibility Study, SE Area	Roy F. Weston	FEB-1984
	Environmental Contamination Survey of LEAD Multiphase Investigation Summary	LEAD, Battelle	MAY-1984
1986			
	Environmental Contamination Monitoring at LEAD Final Report AOOA, PDO/SE Areas	Environmental Science and Engineering, Inc	JAN-1986
	Pilot Investigation of Low Temp. Thermal Stripping of VOCs From Soil	Roy F. Weston	JUN-1986
	Remedial Investigation of the Disposal Area Final Report A00A, SE Area	Environmental Science and Engineering	AUG-1986
	GW at Open Burning/Open Detonation Facilities (AEHA#38-26-045-86), Groundwater, PDO 4, AMMO, 10,46,53	Army (AEHA)	NOV-1986
1987			
	Evaluation of Report Solid Waste Management Units	LEAD, SI, AEHA	FEB-1987
	Geophysical Investigation of IWTP Area, Sites E and F, IWTP Lagoons, SE OU 11, 13,131	Environmental Science and Engineering, Inc	MAY-1987
	Geophysical Investigation of the Eastern Boundary, Vol. 1, SE Area	Environmental Science and Engineering, Inc.	MAY-1987
	Field Investigation Report for Bldg. 1N Sump Pit, LEAD Buildings	EA Engineering Science and Technology	JUN-1987
	Remedial Investigation of the Property Disposal Office (PDO) Area, PDO Area, PDO	Environmental Science and Engineering, Inc.	SEP-1987
	Remedial Investigation of the Southeastern (SE) Area, SE Area, SE, SE AREA Depot	Enviromental Science and Engineering, Inc.	DEC-1987
	LEAD RCRA Monitoring Well Data (1987-1989) Groundwater	LEAD	DEC-1987
1988			
	RCRA Facility Assessment Phase I (SWMU Units), RCRA	A.T. Kearney, Inc. The Earth Technology Corp.	FEB-1988
	Endangerment Assessment of the Property Disposal Office Area, PDO Area, PD	Environmental and Engineering, Inc.	FEB-1988
	Building 1 Chromium Contamination Investigation Report, LEAD Buildings	Roy F. Weston, Inc.	MAR-1988
	RCRA Facility Assessment Phase II (SWMU Units), RCRA	A.T. Kearney, Inc. The Earth Technology Corp.	APR-1988
	Industrial Waste Treatment Plant Lagoon Closure, IWTP Lagoons, SE 11, 13, 131	US Army Corps of Engineers	JUN-1988
	Feasibility Study of the Property Disposal Office Area, PDO Area, PDO, PDO AREA - Depot	Environmental Science and Engineering, Inc.	JUN-1988

IRP Previous Studies

	Title	Author	Date
1988			
	Building 1 Chromium Contamination Investigation QA/QC Plan, LEAD Buildings	Roy F. Weston, Inc.	JUL-1988
	Endangerment Assessment of the Southeastern (SE) Area, SE Area, SE, SE Area - DEPOT	Environmental Science and Engineering, Inc.	SEP-1988
	Draft Groundwater Quality Assessment and Abatement Program, Groundwater, SE 3, SE 6, PDO 2, PDO 4	Environmental Science and Engineering, Inc.	SEP-1988
	Feasibility Study of the Southeastern Area 1st Operable Unit, SE OU 1, 3: K Area, SE Groundwater,SE 1,52	Environmental Science and Engineering, Inc.	SEP-1988
1989			
	LEAD Federal Facilities Interagency Agreement, LEAD, IAG, DEPOT WIDE	LEAD, PADER, EPA	FEB-1989
	Work Element Rationale & Assumptions, Groundwater	Hunter/ESE	MAR-1989
	Groundwater Treatment System, GWTS, SE 11, 13, 131	Carbon Air Services	MAY-1989
	Feasibility Study of Southeastern Area 2nd Operable Unit Volume 1 and Volume 2, SE Area, SE 2, 74, 83	Hunter/ESE	MAY-1989
	IAG Progress Reports (1989)	LEAD, IAG, DEPOT	JUL-1989
	NPDES Part 1 Permit Application Groundwater Treatment System, GWTS, SE 11, 13, 131	LEAD	AUG-1989
	EPRDA Soil Gas Investigation Report (SE Area), Soil, SE,	Weston Services, Inc.	OCT-1989
	Evaluation Report In-Situ Volatization System, LEAD, Soil	Weston Services, Inc.	OCT-1989
	Emissions Treatment Technologies Evaluation In-Situ Vol. System, Soil	Weston Services, Inc.	OCT-1989
	Operations and Maintenance Manual In-Situ Vol. System, Soil	Weston Services, Inc.	OCT-1989
	Soil Sampling for Metals in DRMO Yard, LEAD, Soil, PDO 5, 106	Princeton Testing	OCT-1989
1990			
	Site Investigation (SI), (Ammunition Storage Area), SI, AA, 46, 50, 53	EA Engineering Science and Technology, Inc.	JAN-1990
	Electronic Metal Detection & Soil Vapor Survey - DRMO, PDO OU 1, 2: Soil	Princeton Testing	FEB-1990
	Groundwater Quality Assessment Report Vol. 1-5, (GWAAP), Groundwater, SE 3, 81, 131	Hunter/ESE	FEB-1990
	Industrial Waste Treatment Plant Lagoon Closure Scope of Work, IWTP Lagoons, SE 3, 81, 131	US Army Corps of Engineers - Omaha District	FEB-1990
	Site-specific Safety & Health Plan for SI (Ammo Area), SI, AA, 46, 50, 53	EA Engineering Science and Technology, Inc.	FEB-1990
	RI/FS Draft Management Plan, PDO/SE Areas	Environmental Science and Engineering, Inc.	FEB-1990
	Technical & Sampling/Analysis Plan for SI (Ammo Area), SI, AA, 46, 50, 53	EA Engineering Science and Technology, Inc.	APR-1990
	Technical & Sampling/Analysis Plan for SI (Ammo Area), SI, AA, 46, 50, 5	US Army Corps of Engineers - Baltimore, MD	JUN-1990
	Site Investigation (SI) Field Logs (Ammo Area), SI, AA, 46, 50, 53	LEAD	JUL-1990
	Soil Vapor Contaminant Assessment of the Autocraft Shop Site, LEAD Buildings	EA Engineering Science and Technology, Inc.	JUL-1990
	Feasibility Study of Accelerated Remedial Actions, PDO/SE Areas	USATHAMA	AUG-1990

IRP Previous Studies

	Title	Author	Date
1990			
	Public Involvement and Response Plan for LEAD, Community Relations	Hunter/ESE	SEP-1990
	Proposed Plans for SE and PDO Area under FFS Action, PDO/SE Areas	LEAD, USATHAMA	SEP-1990
	RI/FS Final Sampling Design Plan, Vol. 1 - 3, PDO/SE Areas	Environmental Science and Engineering, Inc.	OCT-1990
	Responses to EPA/PADER on the RI/FS Work Plan, PDO/SE Areas	Environmental Science and Engineering, Inc.	DEC-1990
1991			
	Pollution Abatement & Installation Restoration Program	LEAD, Science and Technology Corp.	JAN-1991
	RI/FS Briefing for LEAD, PDO/SE Areas	Environmental Science and Engineering, Inc.	FEB-1991
	Closure Plan & Site Safety Plan for IWTP Lagoons, IWTP Lagoons, SE 3	Roy F. Weston, Inc.	MAR-1991
	RI/FS Accident Prevention and Safety Plan, PDO/SE Areas	Engineering Science and Technology, Inc.	APR-1991
	Final Proposed Plans PDO & SE Areas Operable Unit One, PDO/SE Areas, SE 1, PDO 1	LEAD	MAY-1991
	Groundwater Treatment Plant O and M Manual, GWTS, SE 11, 13, 131	Carbon Air Services	MAY-1991
	Final Geophysical Survey of Landfill J, SE Area, SE 9, 36	ESE	AUG-1991
	IWTP Lagoons and LTT Test Burn for Soils from LEAD, IWTP Lagoons, SE 11, 13, 131	ACES	AUG-1991
	Fire Training Pit Closure, Fire Training Pit, 63	International Technology Corp.	OCT-1991
	Site Investigation and Assessment Report (Ammo Area) Vol. 1 - 3, SI, AA, 46, 50, 53	EA Engineering Science and Technology, Inc.	NOV-1991
1992			
	Draft Health Assessment for Letterkenny Army Depot(PDO & SE Area), PDO/SE	ATSDR	JAN-1992
	Final Decision Document for Fireman's Training Pit Removal Action, Fire Training Pit,	LEAD	JAN-1992
	Environmental Restoration Program - Annual Report FY 91	DERA, Department of Defense	FEB-1992
	Draft Final RCRA Closure Plan-Storage Area Near Fire Training Pit, Fire Training Pit,	Weston Services, Inc.	APR-1992
	Risk Assess. # 39-26-L317-92, Offpost Resident Wells, PDO/SE Areas	Army Environmental Hygiene Agency, LEAD	APR-1992
	Prelim. Risk Assess., Ingestion of Fish from Rocky Spring Lake	Army Environmental Hygiene Agency, LEAD	JUL-1992
	Inventory of Significant Ecological Features of LEAD	LEAD, The Nature Conservancy	DEC-1992
1993			
	Remedial Investigation, PDO Area, Op. Units 1 & 2, Final Report	ESE	JAN-1993
	Low Temperature Thermal Desorption for Soil Remediation at LEAD	LEAD	FEB-1993
	Public Health Assessment Addendum For LEAD, Final Rpt., PDO/SE Areas	Agency for Toxic Substance & Disease Registry	MAR-1993
	Storm water Pollution Plan For LEAD,	Versar, Inc.	MAR-1993
	Phase II Environmental Site Assess.- Bldg. 56/Vehicle	Woodward-Clyde Co.	APR-1993

IRP Previous Studies

	Title	Author	Date
1993			
	Storage Area, Waste Disposal/Sites		
	Phase I Environmental Site Assessment -Bldg. 56/Vehicle Storage Area, Waste Disposal/Sites	Woodward-Clyde Co.	APR-1993
	Investigation of the Effects of a Groundwater Pump-and-Treat System	Marianne Merritt	MAY-1993
	Risk Assessment of the PDO Area, Operable Units 1 & 2, Final Rpt., PDO OU 1, 2: Soil, PDO Groundwater, PDO 1; PDO 2, 24, 29, 77 97 103	Environmental Science and Engineering, Inc.	JUN-1993
	Remedial Investigation SE Area, Op Units 1&3, Final Rpt	ESE	AUG-1993
	LEAD SWMU Site Investigation Follow-On, Quality Assurance Plan, SI Addendum	ERM, Inc.	AUG-1993
	Technology Remedial Action Report IWTP Lagoon Closure, IWTP Lagoons, SE 11,	ETG/ACES	SEP-1993
	of Closure of IWTP Lagoons 361 & 362, IWTP Lagoons, SE 3, 81, 94	Nassaux-Hemsley, Inc.	SEP-1993
	Acid Burning Pit Decision Document, SI	LEAD	OCT-1993
	RI/FS, PDO Area OU 3, 4: Quality Assurance Project Plan, PDO OU 3, 4, PDO 3;	Versar, Inc.	OCT-1993
1994			
	Feasibility Study of PDO Area Op Units 1&2, Final Report, PDO OU 2; PDO	ESE	FEB-1994
	Feasibility Study of the Southeastern Area: OUs 1, 3, SE Area OUs 1 & 3, SE 1; SE	Environmental Science & Engineering, Inc.	JUL-1994
	Risk Assessment of the SE Area: OUs 1, 3. Vols 1 & 2, SE Area OUs 1 & 3, SE 1;	Environmental Science & Engineering, Inc.,	JUL-1994
	Technical Plan for RI, SE Area OUs 2 & 4-7, SE OU 2 & 4-7, SE 2; SE 4; SE 7, 32,	Fluor Daniel, Inc.	JUL-1994
	Work Plan: RI/FS PDO Area OUs 3 & 4, PDO OU 3, 4, PDO 3; PDO 4, 64, 67, 70	Environmental Science & Engineering, Inc.	AUG-1994
	Contamination Delineation, Water Tower Soils	LEAD	OCT-1994
	Emergency Removal of Water Tower Soils, Final Work Plan, Soil	Fluor Daniel Inc.	DEC-1994
	Work Plan For Silt & Sediment Removal at Rocky Springs, Silt & Sediment Removal	ESE	DEC-1994
1995			
	Proposed Plan, PDO Area, Operable Unit 2, PDO OU 2: Groundwater, PDO 2, 69, 77,	LEAD	FEB-1995
	Transcript of Public Meeting, PDO Area OU 2, March 29, 1995, PDO OU 2:	LEAD	MAR-1995
	Admin Record File for Water Tower (Lead in Soils), PDO Area	LEAD	MAR-1995
	Pilot Study of Spring House Maxistrip Unit., PDO, PDO 5, 98,	ERM	APR-1995
	Quality Assurance Plan, FFS for SE Area OU 3, On Post Groundwater, SE OU 3: SE	Foothill Inc.	APR-1995
	Technical Plan for FFS, SE Area OU 3 (Onpost Groundwater), SE OU 3: SE	Foothill, Inc.	JUN-1995
	Mercury Detect. in Rocky Spring Lake and Bldg 1467 Contamination Assessment PDO OU 3:	ESE	JUN-1995
	Off-post Residential Wells Metals Assessment, PDO OU 4: Off-PDO Groundwater,	ESE	JUN-1995

IRP Previous Studies

	Title	Author	Date
1995			
	Carty Well Volatile Organic Compounds Contamination Assessment, PDO OU 4: Off-PDO	ESE	JUN-1995
	Work Plan for Fine Bubble Diffused Aeration Pilot Scale Testing, PDO OU 1,2: Soil,	ESE	OCT-1995
	SWMU Site Investigation Follow-On Report, SI	LEAD	DEC-1995
	PCB Release Report Assessment/Sampling Plan, LEAD, PDO OU 5, PDO 5, 98, 106,	CH2MHILL	DEC-1995
1996			
	Removal Action, Water Tower Soils, LEAD, PDO Area	LEAD	MAR-1996
	Fish Stocking Program & Fish Consumption No. 39-EJ-4371-96, PDO OU 5: PCBs,	US Army CHPPM	APR-1996
	Rowe Run Farm Animal Products. Fin Rpt Addendum to RI of SE Area, SE Area, SE	ESE, Inc.	APR-1996
	Engineering Evaluation/Cost Analysis, SE Area, OU2, Indus. Waste Sewer Sys. Soil, SE OU2:	Fluor-Daniel	APR-1996
	Analysis of Water Quality Data From Monitoring Wells at LEAD RCRA Site, IWTP	USGS	MAY-1996
	Mercury Detect. in Rocky Spring Lake-Site Invest. of PDO Area OU3, PDO OU 3:	Versar	AUG-1996
	Phase I Environmental Baseline Study for LEAD (BRAC 95) Vols. I-III, BRAC, SE 8, PDO 6	Weston	AUG-1996
	Emergency Delineation/Removal of Soils at the PDO Oil Burn Pit, PDO OU 4: Off-	Weston	OCT-1996
	Technical Plan for Emergency Removal of Soils & Sediments at LEAD, SE Area, SE	Weston	OCT-1996
1997			
	CERFA Letter Report	LEAD (BRAC), Weston	MAR-1997
	EE/CA, SE Area OU 4, Stormwater Sewer & Drainage Way Sediments, SE OU 4, SE	Fluor Daniel	MAR-1997
	LEAD 1997 Installation Action Plan, DERA, DEPOT WIDE	LEAD	MAR-1997
	EE/CA For Spill Area in Area A, SE Area, OU 5., SE OU 5, SE 5, 79, 105	Fluor "Daniel, Inc.	JUL-1997
	Final Technology Remedial Action Report, (K Area Soils Remediation), SE OU 1: (K	Mclaren Hart, Environmental Eng. Corp.	AUG-1997
	Geophysical Investigation at Area J - Landfill, near Bldg. 320, Final Report, SE 9, 36	Geophex, LTD	AUG-1997
	SE Area OU-7, Truck Open Storage Area & Abandoned Septic Tank, SE OU 7 , SE 7	Fluor Daniel, Inc.	SEP-1997
	Letterkenny Army Depot Phase I Parcels Proposed Plan, BRAC Phase I Parcels, SE	Weston, Inc.	OCT-1997
1998			
	Final Environmental Assessment for BRAC 95 Disposal & Reuse of Property at LEAD, BRAC 95	US Army Material Command	JAN-1998
	Area of Concern (AOC) Decision Documents Phase I Parcels, Final Report, SE 8	Roy F. Weston	APR-1998
	Final Termination Survey for Defense Logistics Agency Buildings, LEAD, DLA	Roy F. Weston	JUN-1998
	Follow-up Geophysical Investigations (Area J; Landfill - July 1998) , Follow-up Final	Fluor Daniel GTI - IT Group	JUL-1998
	Final Community Relations Plan, LEAD Community Relations Plan, SE & PDO Areas,	Roy F. Weston	AUG-1998

IRP Previous Studies

	Title	Author	Date
1998			
	Historical Assessment of Radiological Activity at (LEAD), Historical Assessment of	Roy F. Weston	AUG-1998
	Historical Assessment of Radiological Activity at DLA Bldgs. at LEAD, RAD Assess.	Roy F. Weston	AUG-1998
	Final Termination Survey Report for Bldg. 6 and 9, Final Termination for Bldgs. 6/9,	Roy F. Weston	SEP-1998
	Remedial Investigation Report, Final RI, SE 2, 74, 83,	Fluor Daniel, Inc.	SEP-1998
	ROD for Phase I Parcels at LEAD, ROD Phase I Parcels, SE 8	Roy F. Weston	SEP-1998
	Depot-Wide QAPP-Environmental Analysis to Support Invest. Remove/Disposal, Depot-Wide	Roy F. Weston	SEP-1998
	Finding of Suitability to Transfer (FOST) for Phase I Parcels @ LEAD, Final (FOST)	Roy F. Weston	OCT-1998
	Final Termination Survey Report for Building 7 - LEAD, Final Termination Survey	Roy F. Weston	NOV-1998
	Final Termination Survey Report for Building 8 - LEAD, Final Termination Survey	Roy F. Weston	NOV-1998
	BRAC Phase I Parcel AOC Decision Documents, Decision Document - AOC Phase I,		DEC-1998
	Finding of Suitability to Lease (FOSL) for Bldgs. 7,8, and 42 @ LEAD, Final (FOSL)	Roy F. Weston	DEC-1998
	Final Termination Survey Report for Tank 913 - LEAD, Final Termination Survey	Roy F. Weston	DEC-1998
1999			
	Final Termination Survey Report for Building 4, Final Termination Report, SE 8	Roy F. Weston	JAN-1999
	Property and Health Plan for Remedial Action at DRMO Scrap Yard, Final Doc. Site	ICF Kaiser Engineers	MAR-1999
	Time Critical Removal Action Work Plan for PCB Removal at DRMO, Final - Time	ICF Kaiser Engineers	MAR-1999
	Soil Character/Removal Evaluation Rpt for the PDO at DRMO Scrap Yd., Final Doc.	Roy F. Weston	MAR-1999
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	Final Termination Survey Report for Tank 815, Final Termination Report, SE 8	Roy F. Weston	MAR-1999
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	Phase II Environmental Site Assessment Building 350 Park Area, Final Report for	URS Greiner Woodward Clyde	MAY-1999
	Phase II Environmental Site Assessment Building 350 Park Area, Final Report for	URS Greiner Woodward Clyde	MAY-1999
	Final Termination Survey Report for Building 5, Final Termination Report, SE 8	Roy F. Weston	MAY-1999
	Addendum to Environmental Baseline Survey (LEAD BRAC 95 Action), Addendum	Roy F. Weston	MAY-1999
	In Situ Chemical Oxidation Remediation Pilot Study of Bedrock Aquifer, Final Doc.	Roy F. Weston	JUN-1999
	Historical Assessment of Radiological Activity @ LEAD, Final	Roy F. Weston	JUN-1999
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	Finding of Suitability to Lease (FOSL), Bldgs. 5, 52 and 56 @ LEAD, Final Report, SE 8	Roy F. Weston	SEP-1999

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1999			
	Geophysical Investigation of DRMO Scrap Yard Area G, Final Report, PDO 9, 36	Weston Solution	OCT-1999
	Tech. Plan: Test Trench Investigation. For Tear Gas Cylinder at DRMO Scrap Yard, Final Document For Tear Gas Investigation, PDO 5, 106	Roy F. Weston	NOV-1999
	Tech. Plan: Rowe and Rocky Springs Pilot Studies (LEAD), Final Doc. For Rowe	Roy F. Weston	NOV-1999
	Final - Rowe Spring Pilot Test Report, Final Report, SE 6, 68	SAIC	NOV-1999
	Rowe & Rocky Spring Pilot Study, Final Technical Plan, SE 6, PDO 5, 107, 071,	Roy F. Weston	NOV-1999
	Rowe & Rocky Spring Pilot Study, Final Technical Plan, SE 6, PDO 5, 107, 071,	Roy F. Weston	NOV-1999
	Investigation of PCBs in the PDO Area, OU 5 @ LEAD, Final Report, PDO 5, 106	Roy F. Weston	DEC-1999
2000			
	SE OU 3 UVB Recirculation Well Pilot Study Report, Final Report, SE 3, 81	IT Corporation	JAN-2000
	Summary Report for PDO DRMO, Scrap Yard Area G, Tear Gas Investigation, Final Summary Doc., PDO 5, 106	Roy F. Weston	FEB-2000
	Decision Document - Mercury Detection in Rocky Spring Lake, PDO OU3, Decision Document, PDO 3, 70, 67	IT Corporation	FEB-2000
	Phase II - Finding of Suitability to Lease (FOSL) @ LEAD, Final Report, SE 8	Roy F. Weston	FEB-2000
	Final Termination Survey Report for Bldg 441, Final Termination Report, SE 8, 116, 118	Roy F. Weston	FEB-2000
	Phase II FOSL Bldgs. 5, 5-2, 56 - Bldgs.7, 8, 42 - Bldgs. 6, 9, 19, 412, 416, 500, 522, 2291, Final Report, SE	Weston Solution	MAR-2000
	Building 349 Sump Pump Operations and Monitoring Report 1996-1999, Final Report, PDO 3, 94	Geophex, Ltd.,	APR-2000
	Final Termination Survey Report for Bldg 32, Final Termination Report, SE 8 or 7, 80	Roy F. Weston	MAY-2000
	Final Termination Survey Report for Bldg 33, Final Termination Report, SE 8 or 7, 80	Roy F. Weston	MAY-2000
	Final Termination Survey Report for Bldg 811, Final Termination Report, SE 8	Roy F. Weston	MAY-2000
	SE OU 3 In Situ Ozonation Pilot Study Report, Final Report, SE 3, 81	IT Corporation	JUN-2000
	EE/CA Open Vehicle Storage Area Soils PDO 6 / SE 8 (Volume I and II), EE/CA Final Report, PDO 6; SE 8	Roy F. Weston	JUN-2000
	Data Validation Report SE OU 4, Data Validation (Final), SE 4, 32,34,72,73	Roy F. Weston	JUN-2000
	Data Validation Plan for Historical Environmental Analytical Data, Data Validation Plan (Final), SE 4, 32,34,72,73,	Roy F. Weston	JUN-2000
	Data Validation Report SE 4 - Metals and Total Organization Attachment, Data Validation Report (Final), SE 4, 32,34,72,73anic Carbon Data - Vol. (1-5)	Roy F. Weston	JUN-2000
	Supplement Invest. Summary Rpt. for SE OU 7 Truck Open Storage Area, Final Report , SE 7, 80, 82	Roy F. Weston	JUL-2000
	Decision Documents Former PCB Transformer Sites (SE Area OU 8) DSERTS LEAD-125, Final Report, SE	Roy F. Weston	OCT-2000

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	Supplement 1 to the Environmental Baseline Survey for LEAD BRAC 95 Action, Final Report, SE & PDO Areas	Roy F. Weston	NOV-2000
	Tech. Work Plan - Removal Action Dioxin-Contaminated Soils at (TOSA), Final Report, SE 8	AMDYNE Corporation	DEC-2000
2001			
	Groundwater Recovery Investigation Assessment Report, Final Report	Foothill, Inc.	JAN-2001
	Seasonally High Groundwater Determination for Phase 2 BRAC Parcels, Final Report, SE 8	EPSYS Corporation	FEB-2001
	Feasibility Study Report for Gate 1 Guardhouse, Bldg 511, SE area OU 8, Final Report	Roy F. Weston	FEB-2001
	Proposed Plan for Phase II Parcels (LEAD), Final Report, SE 8	Roy F. Weston	FEB-2001
	Groundwater Vapor Intrusion Risk Assessment Phase I and II Parcels, Final Report, SE 8	Roy F. Weston	FEB-2001
	Remedial Investigation & Risk Assessment Report for Gate 1 Guardhouse, Final Report, SE 8	Roy F. Weston	FEB-2001
	Proposed Plan for Phase II Parcels (LEAD), Final Report, SE 8	Roy F. Weston	FEB-2001
	Enhanced Bioremediation Pilot Study (EBPS) SE OU 10, Final Report, SE 10, 101, 128	Roy F. Weston	MAR-2001
	Data Validation Report SE OU 2-Inorganic Data (Lead/Selenium Soil) (1-13 Vol.), Final Report, SE 2	Roy F. Weston	MAR-2001
	Eng. Evaluation/Cost Analysis for lot 48 former Ingot Storage Area SEOU8, Final Report, SE 8, 60	Roy F. Weston	APR-2001
	Asbestos Air Sampling Results for BRAC Bldg. PDO OU6 & SE OU8, Final Report, PDO 6; SE 8	Roy F. Weston	APR-2001
	PDO OU5 Remedial Completion Report for PCB Removal at DRMO, Final Report PDO 5, 106	IT Corporation	MAY-2001
	PDO OU 5 Removal Action Completion Report for PCB Removal at DRMO Scrap Yard, Removal Completion Report (Final), PDO 5, 106	IT Corporation	MAY-2001
	Final Termination Survey Report for Building S-331, Final Termination Survey Report PDO 6	Roy F. Weston	MAY-2001
	Record of Decision for Phase II Parcels - LEAD, Record of Decision - Final, SE 8	Roy F. Weston	JUL-2001
	In Situ Chem. Oxidation Pilot Test; Technical Plan (SE OU - 11) IWTP Lagoons, Final Technical Plan, SE 11, 131	SAIC	JUL-2001
	Removal Action Completion Report - Dioxin - Contaminated Soils at TOSA, Removal Action - RA, SE 7, 80	Amdyne Corporation	AUG-2001
	PDO 6 & SE 8 - Removal Action Completion Rpt PAH-Contaminated Soils & OVSA Final Report, PDO; SE	IT Group	SEP-2001
	Five Year Review Report SE Area National Priorities List, Five Year Review SE Area (Final), SE Area	US Army Corps. of Engineers (Baltimore Dist.)	OCT-2001
	Five Year Review Report (Addendum to Report) K Area Cap Inspection, Addendum K Area I Inspection (Final), SE Area	US Army Corps. of Engineers (Baltimore Dist.)	NOV-2001
	Finding of Suitability to Transfer (FOST), for the Phase II BRAC Parcels, FOST for Phase II BRAC Parcels, SE 8	Roy F. Weston	NOV-2001
2002			

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Report for the Tannin Pilot Surface Decontamination Study for Bldgs. 651 & 652, Final Report for the Tannin Pilot, PDO 6	Roy F. Weston	JAN-2002
Background Soil and Sediment Sampling Results, Final Soil & Sediment Report, PDO 6; SE 8	Roy F. Weston	JAN-2002
Evaluation of Recreational / Daycare Use for the Chapel / Gym Parcel - (PDO Area), Final Evaluation Report, PDO 6	Roy F. Weston	JAN-2002
2002 ER,A Installation Action Plan (IAP), Final Report, PDO; SE	FORSCOM/AMC IAP Support	JAN-2002
Planning Doc.- Removal Action Lead Contaminated Soils @ Lot 48 Ingot Storage, Final Planning Document, SE 8, 60	Amdyne Corporation	APR-2002
Engineering Evaluation/Cost Analysis for the Former PDO Scrapyard, Final EE/CA PDO 6, 66, 93	Roy F. Weston	MAY-2002
Technical Plan for: BRAC Investigations in the SE OU 8, Final - Technical Plan, SE 8 2,8,11,16,33,49,60,72,73,74,92,114,115,118,124,125,126, 130	Roy F. Weston	MAY-2002
Remedial Investigation & Risk Assessment Report for former Vehicle Storage Area North of Test Track, Final RA / RA, PDO 6; SE 8	Roy F. Weston	MAY-2002
Final Termination Survey Report for Bldg. 14, Final - Termination Survey, SE 8	Weston Solution	JUN-2002
SE OU 2 Industrial Wastewater Sewers - Risk Assessment Report, Final Report, SE 2, 74	IT Group	JUN-2002
2003 ER,A Installation Action Plan (IAP), Final Report, PDO;SE	AMC IAP Support	JUL-2002
Final Work Plan for Risk Assessment for PDO OU 5, Final Work Plan, PDO 5	Roy F. Weston	AUG-2002
Land Use Control Assurance Plan - Memo. of Agreement for LEAD BRAC Phase 1 & 2, Final Report, SE 8, 21,27,110,114,116,119,123	Letterkenny Army Depot	AUG-2002
LEAD - Long-Term Monitoring Efforts at PDO OU 2 4A and 4B, Final Document, PDO 2, 4A, 4B, 69,77,78,97	The IT Group	AUG-2002
Remedial Investigation & Risk Assessment Report for 400 Series Fire Training Area, Final Report, SE 8, 118	Weston Solution	SEP-2002
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Addendum to the PCB Removal Work Plan at the DRMO Scrap Yard, Final Addendum to Removal Action, PDO 5, 106	Weston Solution	OCT-2002
2002 Finding of Suitability to Lease (FOSL), Final 2002 FOSL, SE 8, 1, 2	Weston Solution	OCT-2002
RI & RA for Backwash Discharge Area, Final RI/RA, SE 8, 11	Weston Solution	OCT-2002

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Removal Action Completion Report - Lead - Contaminated Soils at Lot 48, Final Removal Action Report, SE 8, 60	Amdyne Corporation	FEB-2003

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	Remedial Investigation (RI) and Risk Assessment - Open Vehicle Storage Area, Final Report, SE 8; PDO 6, 110,114	Weston Solution	APR-2003
	Summary Report on the Groundwater Quality in the Southern Martinsburg Shale Region, Final report, SE 7; SE 13, 126,011,118	Weston Solution	APR-2003
	Proposed Plan for Phase III Parcels, Final Report, SE 7;SE 8;SE 13;PDO 6, 126, 118, 011, 110, 114	Weston Solution	APR-2003
	Installation Action Plan for 2004, Final Report, SE; PDO, IRP Program	LEAD	APR-2003
	In Situ Chemical Oxidation Pilot Test Report - SE OU 11 IWTP Lagoons, Final Report, SE	SAIC	JUL-2003
	Focused Feasibility Study for the SE OU 10 (Conococheaue Drainage) Volumes I ¿ XII, Final Report, SE 6; SE 10	Weston Solution	AUG-2003
	Finding of Suitability to Transfer (FOST) for the Phase III BRAC Parcels, Final Report, SE	Weston Solution	AUG-2003
	Record of Decision for Phase III Parcels, Final Report, SE	Weston Solution	AUG-2003
	SE OU 4 Stormwater Sewers and Associated Sediments Removal Action Summary Report, Final Report, SE 4, 72	SHAW Environmental	SEP-2003
	Depot Wide Quality Assurance Project Plan for Invest. Removal, Disposal activities at LEAD, Final Report, SE; PDO	Weston Solution	OCT-2003
	K Area 1, 2 and 3 Cap Inspection Forms for Five Year Report, Final Report, SE 1, 52	ARMY	DEC-2003
2004			
	Comprehensive Environmental Response, Compensation, & Liability Act" (CERCLA) ESD TWO: Final Report, SE 1, 52	Letterkenny Army Depot	MAY-2004
	Action Memorandum for LEAD Non-Contaminated Soil at the Former Scrapyard, Final Report, PDO, 66, 93	Weston Solution	JUN-2004
	RI & RA Report for the Former Transformer Area near Building 98 (SE OU 8), Final Report, SE 8, 125	Weston Solution	JUL-2004
	SE OU 4 Storm Water Sewer and Contaminated Sediments (Proposed Plan), FinalReport, SE 4, 32, 34, 72	SHAW Environmental	OCT-2004
	Final Termination Survey Report for Building 51, Final Report, SE 8, 23	Weston Solution	NOV-2004
	SE OU 2 Industrial Wastewater Sewers - Feasibility Study Report, Final Report, SE 2, 74, 83	IT Group	NOV-2004
	SE OU6 southeastern Area Off-Post Groundwater Remedial Investigation Report	Shaw	NOV-2004
	Technical Plan for Horizontal and Vertical Characterization of the GW Aquifer in SEOU 3A, OU 11 and OU 6, Final Report, SE 3A, SE 11, SE 6, 13, 52, 68, 79, 81, 84, 86, 87, 88, 96, 104, 131	Weston Solution	DEC-2004
	Engineering Evaluation/Cost Analysis for LEAD Contaminated Soil at the PDO Scrapyard, Final Report, PDO, 66, 93	Weston Solution	DEC-2004
2005			
	SE Area - OU4 - Storm Water Sewer and Contaminated Sediments, 72, 73, 74 - Final Record of	Shaw	AUG-2005

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2005			
	Decision		
	SE Area OU 2: Industrial Wastewater Sewers (IWWS) and Contaminated 83, Proposed Plan Final	Shaw	DEC-2005
2006			
	Landfill G Remedial Investigation Workplan	Shaw	JUN-2006
	SE OU6 Rowe Run Basin Off-Post Groundwater Risk Assessment Report	Shaw	JUL-2006
	Final Risk Assessment Report for SE OU 6 - Rowe Run Area Off-Post Contaminated Groundwater	Shaw	JUL-2006
	SE OU 2 - 75, 83 Industrial Sewers (IWWS) and Contaminated Soils - 75, 83 Final Record of Decision	Shaw	SEP-2006
	Landfill G Soil Sample Results and Work Plan Addendum for SEOU12 at Letterkenny Army	Shaw	OCT-2006
	Soil Removal Summary Report for the PDO Area - Oil Burn Pit (OBP) OU 1 and 4 (LEAD-010)	Weston Solutions	NOV-2006
2007			
	First Five-year Review Report for Letterkenny Army Depot Property Disposal Operations Area	Weston Solutions	JAN-2007
	Final Work Plan for Vapor Intrusion Pathway Evaluation SE OU 6 and 11	Weston Solutions	JUN-2007
	Ammunition Area - TNT Washout Plant and Burning Ground No. 2 Remedial Investigation Work Plan	Shaw	OCT-2007
	SE OU 5 - Area A and B Earthworm Sampling and Assessment Plan	Shaw	DEC-2007
2008			
	Workplan for Benthic Macroinvertebrate Sampling SE OU6 Off-Post Groundwater in the Rowe Run Basin Letterkenny Army Depot	Shaw	MAR-2008
	Ammunition Area SE OU 12 Landfill G, RI fieldwork Report	Shaw	MAR-2008
	TNT Washout Plant and Open Burn Pit fieldwork Report	Shaw	APR-2008
	Ammunition Area, PDO and SE areas, Well Abandonment report	Shaw	MAY-2008
	Second Five Year Review SOUTHEASTERN AREA LETTERKENNY ARMY DEPOT	Weston Solutions	JUN-2008
	Community Relations Plan - LEAD	Weston Solutions	SEP-2008
	REMEDIAL INVESTIGATION (RI) AND RISK ASSESSMENT (RA) REPORT	Weston Solutions Inc.	OCT-2008
	Base Realignment & Closure for 2009	Army	NOV-2008
	Army Defense Environmental Restoration Program Installation Action Plan for 2009	Army	NOV-2008
2009			
	Transfer/Burning Revetment Removal Action Completion Report for PDO OU 4 AEDB-R 048	Weston Solutions Inc.	APR-2009
	Remedial Investigation for PCBs and Pesticides in the Rocky Spring Drainage System PDO 5	Weston Solutions Inc.	APR-2009
	Technical Plan for Soil Boring Investigation in the Sheet Flow Area Downstream from the Open Burning Ground No. 2	Weston Solutions Inc.	SEP-2009
	Combined Technical Plan for GW and Drainageway	Weston Solutions Inc.	NOV-2009

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	Title	Author	Date
2009			
	Investigation at TNT Washout Plant 050, and Landfill J 036 and Bldg. 320		
2010			
	Screening Level Ecological Risk Assessment (SLERA) Report for the Property Disposal Office (PDO) Area Drainageways, PDO Operable Units (OUs) 5 and 6	Weston Solution	JAN-2010
	Addendum to South East (SE) Area - Five Year Review (2008) (First Five Year Review)	ARMY / EPA	FEB-2010
	2009 Annual Groundwater and Surface Water Monitoring Report for SE OU 10	Weston Solution	MAR-2010
	SE OU 2 Industrial Wastewater Sewers and Associated Contaminated Soils Land Use Controls Remedial Design	SHAW Environmental	MAR-2010
	RI/RA Report for the TNT Washout Plant (AEDB-R LEAD - 050)	Weston Solutions	OCT-2010
	Focused Feasibility Study (FFS) for Southeastern (SE) Area Operable Unit (OU) 3A (AEDBR Site LEAD-081), OU 11 (AEDBR Site LEAD-131), and OU 6 (AEBDR Sites LEAD-68, -076, -084, -086, -087, -088, 096, and -104)	Weston Solutions	OCT-2010
	Final ER,A Installation Action Plan	USAEC/ LEAD	OCT-2010
	RI/RA Report for Building 349 Soil Staging Area SE OU 8 (AEDB-R LEAD - 114)	Weston Solutions	NOV-2010
	Remedial Investigation and Risk Assessment (RI/RA) Report for Drainageways Downstream From Open Burning Ground No. 2 Ammunition Area (AEDBR Site LEAD-053)	Weston Solutions	DEC-2010
	"Addendum to the Remedial Investigation and Risk Assessment (RI/RA), LKD.RT-350	Weston Solutions	DEC-2010
	Remedial Investigation and Risk Assessment (RI/RA) Report for the Upper/Northern PDO Sites Property Disposal Office (PDO) Area, OU 4 (AEDBR Sites LEAD-040, 044 and 048), LKD.RT-350	Weston Solutions	DEC-2010
2011			
	"Remedial Investigation and Risk Assessment (RI/RA) and RCRA Closure Report for Bldg. 675 and Storage Pads 676 and 696 PDO OU 6 - (AEDBR Site LEAD-129), LKD.RT-352	Weston Solutions	JAN-2011
	K Areas 1, 2 and 3 Cap Inspections, LKD.RT-351	Weston Solutions	FEB-2011
	"Remedial Investigation (RI) and Risk Assessment (RA) Report and Resource Conservation and Recovery Act (RCRA) Closure Report for the Building 37 Site (AEDBR Site LEAD-002) and Vapor Intrusion Pathway Evaluation for Building 47 Southeastern (SE) Area Operable Unit (OU) 8, LKD.RT-353	Weston Solutions	FEB-2011
	"Remedial Investigation and Risk Assessment (RI/RA) Report for the Landfill 5 Area G Security Landfill (Landfill G) Site Southeastern (SE) Area, Operable Unit (OU) 12 (AEDBR Site LEAD-039), LKD.RT-354	Weston Solutions	FEB-2011
	"2010 Annual Groundwater and Surface Monitoring Report for SE Area Operable Unit 10 AEDB-R Lead 090, 091, 095, 100, 101, 128, LKD.RT-355	Weston Solutions	APR-2011

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	Title	Author	Date
2011			
	FS For The Lower PDO Area, OU 2 (AEDBR Sites LEAD-024, 029, 069, 077, 097), OU 5 (AEDBR Sites LEAD-098, 106, 107), and OU 6 (AEDBR Sites LEAD-026, 037, 066, 093, 111, 113, 117, 129), LKD.RT-356	Weston Solutions	AUG-2011
	FS For The Lower PDO Area, OU 2 (AEDBR Sites LEAD-024, 029, 069, 077, 097), OU 5 (AEDBR Sites LEAD-098, 106, 107), and OU 6 (AEDBR Sites LEAD-026, 037, 066, 093, 111, 113, 117, 129), LKD.RT-357	Weston Solutions	SEP-2011
	Remedial Investigation and Risk Assessment (RI/RA) and RCRA Closure Report for the Ammunition Area Drum Storage Pad Areas, Property Disposal Office (PDO) Area Operable Unit (OU) 8 (AEDBR Site LEAD-112), LKD.RT-358	Weston Solutions	OCT-2011
	Feasibility Study (FS) Report for the TNT Washout Plant (AEDBR Site LEAD-050), Drainageways Downstream From Open Burning Ground No. 2 (AEDBR Site LEAD-053), and The Landfill 5 Area G Security Landfill (Landfill G), SE Area OU 12 (AEDBR Site LEAD-039) Ammunition Area, LKD.RT-359	Weston Solutions	NOV-2011
2012			
	2011 Annual Groundwater and Surface Water Monitoring Report for Southeastern (SE) Area Operable Unit (OU) 10, AEDB-R Sites LEAD-090, 091, 095, 100, 101, & 128, LKD.RT-360	Weston Solutions	FEB-2012
	Feasibility Study (FS) Report for the Upper Property Disposal Office Area Operable Unit (OU) 4 AEDB-R Sites LEAD-010 & 078, OU 6 (AEDBR Sites LEAD-110B), and OU 8 (AEDBR Sites LEAD-040, 044, 048, 112), LKD.RT-361	Weston Solutions	FEB-2012
	Explanation of Significant Differences for a Subset of the Phase I & II BRAC Parcels, LKD.RT-363	Weston Solutions	MAY-2012
	Addendum 1 to the Remedial Investigation and Risk Assessment (RI/RA) Report for the Landfill 5 Area G Security Landfill (Landfill G) Site Southeastern (SE) Area, Operable Unit (OU) 12 (AEDBR Site LEAD-039), LKD.RT-362	Weston Solutions	MAY-2012
	Record of Decision for the Phase V BRAC Sites Southeastern (SE) Area Soil Operable Unit (OU) 7, (AEDB-R Sites LEAD-080 & 082) and Part of SE OU 8 (AEDB-R Sites LEAD-001. 008, 055, 060, 073, 092, 118, 126, 127, 130), LKD.RT-364	Weston Solutions	JUN-2012
	Proposed Remedial Action Plan for the TNT Washout Plant (AEDBR Site LEAD-050), Drainageways Downstream From Open Burning Ground No. 2 (AEDBR Site LEAD-053), and The Landfill 5 Area G Security Landfill (Landfill G), SE Area OU 12 (AEDBR Site LEAD-039) Ammunition Area, LKD.RT-365	Weston Solutions	JUL-2012
	Focused Feasibility Study for the Former Test Track and the Building 349 Soil Staging Area, SE OU 14 (AEDBR Site LEAD-132), LKD.RT-366	Weston Solutions	SEP-2012
	Five-Year Review Report Letterkenny Army Depot Southeastern Area (Third Review) and Property Disposal Office Area (Second Review) NPL Sites, LKD.RT-367	Weston Solutions	SEP-2012

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	Title	Author	Date
2012			
	Record of Decision for the TNT Washout Plant (AEDBR Site LEAD-050), Drainageways Downstream from Open Burning Ground No. 2 (AEDBR Site LEAD-053), and the Landfill 5 Area G Security Landfill (AEDBR Site LEAD-039) Ammunition Area, LKD.RT-368	Weston Solutions	SEP-2012
	2012 Annual Groundwater and Surface Water Monitoring Report for Southeastern Area OU 10 AEDBR Sites LEAD-090, 091, 095, 100, 101, 128., LKD.RT-369	Weston Solutions	NOV-2012
	FY 12 Final ER,A Installation Action Plan, LKD.RT-370	Army	DEC-2012
2013			
	Focused Feasibility Study for the Building 37 Site (AEDBR Site LEAD-002) and Building 47 SE OU 8, LKD.RT-371	Weston Solutions	JAN-2013

LETTERKENNY ARMY DEPOT

Installation Restoration Program

Site Descriptions

Site ID: LEAD-009
Site Name: CLAY LINED FTA (AREA B)
Alias: SE OU 5

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Phases	Start	End
PA	198001	198602
SI	198001	198602
RI/FS	199310	201409

RIP Date: N/A

RC Date: 201410

SITE DESCRIPTION

This former fire training area contained high levels of VOCs in soil. An IRA was completed for soil in fiscal year (FY)97. The site will be addressed under a ROD including sites LEAD-079 and LEAD-105 which make up SEOU 5. This site was prematurely closed in Army Environmental Database Restoration (AEDB-R) and was reopened.

Groundwater contamination is addressed in SEOU 3 (LEAD-081).

CLEANUP/EXIT STRATEGY

No further RA is planned. Following the completion of the RI/FS, the site will be closed under a ROD including sites LEAD-079 and LEAD-105 which make up SEOU5.

Site ID: LEAD-010
Site Name: OIL BURNING PIT
Alias: PDO OU 4

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	198001	198602
SI	198001	198602
RI/FS	199704	201406
RD	201406	201503
IRA	199705	199906
RA(C)	201503	201509
RA(O)	201510	204509

RIP Date: 201510

RC Date: 204509

SITE DESCRIPTION

This former OBP was used for fire training. It is located at the intersection of Georgia Avenue and Scale House Road, just north of the Transfer Burning Pits. Used solvents and oils were dumped into the OBP and set afire for fire training. Soils and underlying groundwater were contaminated with solvents, primarily 1,1,1-trichloroethane. Other VOCs include trichloroethene and 1,4-dioxane. In 1998, an interim soil RA was completed using chemical oxidation. One small, shallow area of soil with elevated TCE contamination still remains. The findings of the RI/FS will determine if any additional work is required to address the TCE contamination.

Initially, the groundwater plume was thought to have migrated north back into Army retained property; however, groundwater sampling conducted in 2003 and 2004 revealed that groundwater contamination also migrates southwest into PDO OU 2 (property transfer area). Groundwater sampling is currently underway to delineate a dense non-aqueous phase liquid zone and depth, and to identify the extent of VOC contamination. The Open Trench Landfill (LEAD-040) and Transfer Burning Pits (LEAD-048) are located just south of the OBP. The groundwater sampling was designed to take into consideration the locations of LEAD-040 and 048 as part of conceptual site model development. Four additional monitoring wells were installed in FY05 south of the shale limestone interface and north of the Defense Reutilization and Marketing Office (DRMO) scrapyard to further delineate the plume.

As of a revised BRAC MOA dated January 2007, this site is being retained by the Army.

CLEANUP/EXIT STRATEGY

The proposed remedy is electrical resistivity heating (ERH). ERH will address VOCs trapped in bedrock matrix. RA(O) VOC groundwater monitoring will continue after conclusion of ERH treatment.

Site ID: LEAD-029
Site Name: ROCKY SPRING LAKE (VOC'S)
Alias: PDO OU2

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Surface Water

Phases	Start	End
PA	198001	198602
SI	198001	198602
RI/FS	199101	201309
RD	201302	201403
RA(C)	201302	201403
RA(O)	201202	204312

RIP Date: 201403

RC Date: 204312

SITE DESCRIPTION

This area consists of VOC-contaminated groundwater (on-post and off-post) in the PDO area, as well as VOC source areas exclusive of the Drum Storage Revetments (PDO OU 1) and the OBP area (PDO OU 4). Due to the infeasibility of treating upgradient groundwater, PDO OU 2 groundwater issues at the springhouse at Rocky Spring are addressed rather than an attempt to treat at multiple upgradient sources. Ten years of long-term management (LTM) at the springhouse indicates that VOC concentrations are dropping.

The RD for the VOC treatment system was in progress when several significant regulatory actions occurred. The PADEP bureau of air quality ruled that the VOCs emissions from the Rocky Spring Treatment Plant would be "de minimus," and would not require an air permit. The PADEP agreed that a naturally occurring spring would not require a National Pollution Discharge Elimination System (NPDES) permit. Pennsylvania enacted the Environmental Remediation Standards Act (Act 2), which established remediation standards consistent with federal requirements or risk-based standards for soil and groundwater cleanup. This resolved the administrative discrepancy between the PADEP and the Army.

In August 2007, a PBA was awarded to Weston Solutions to address all remaining BRAC and ER,A actions. This contract includes the remedial action (operation) [RA(O)] sampling for PDO OU 2. The MNA/RA(O) monitoring program for LEAD 029 and LEAD-077 is now being rolled into LEAD-093 until conclusion of the PBA contract in December 2014.

The new PP and ROD will address the following issues that affect the remedy for PDO OU 2:

PDO OU 4: Recent investigations have determined that VOC contaminated groundwater from the OBP (shale) is migrating towards the PDO valley (limestone). This site had not been adequately investigated due to the presence of a large amount of waste wood (up to 30 feet high) that blocked access to drilling sites. It is not currently known if the VOC contaminated groundwater from the OBP is steady state [VOC levels are constantly (increasing/decreasing)]. In addition the time of travel in the shale in this area is unknown.

An increase in the VOCs discharging from the OBP may adversely affect PDO OU 2.

Based on the findings of the OBP RI, the Army and regulators have agreed to a boundary between PDO OU 2 and 4 along Vehicle Road just north of the DRMO scrapyard.

PDO OU 5 addresses PCBs in the PDO system. The source of the PCBs was determined to be the DRMO scrapyard. Emergency removals have been conducted at the DRMO scrapyard and downgradient drainage ways. The Army is continuing to measure the concentration of PCBs in the sediment from Rocky Spring. It appears that the concentration of PCBs in the sediment is decreasing. Additional PCB sampling will be conducted to verify this decrease. This information will be used to determine the length of time PCB contaminated sediments will be discharged (at levels of concern).

The Army, the USEPA, and the PADEP have agreed to address OU 2 and OU 5 remedies together in one ROD.

Site ID: LEAD-029
Site Name: ROCKY SPRING LAKE (VOC'S)
Alias: PDO OU2

The performance objective for LEAD-029, as defined in the statement of objectives for the LEAD PBA, is remedy-in-place (RIP) or response complete (RC) by June 30, 2014.

CLEANUP/EXIT STRATEGY

The proposed MNA remedy for PDO OU 2 includes:
- establishing long-term land LUCs on groundwater/ surface-water usage until VOC levels in the PDO OU 2 groundwater and surface water decline to acceptable risk-based concentrations (RBCs).
- implementing an MNA program to document the continued natural attenuation of the groundwater plume to demonstrate that the plume is continuing to decline in both concentration and lateral extent (retracting). (The continued improvement of the surface water quality discharging at Rocky Spring will also be monitored as part of the MNA program. Surface water treatment at Rocky Spring is not required because the PADEP agreed to move the point of compliance to the dam at Rocky Spring Lake where VOCs are non- detected.)
- establishing points of compliance. A set of six groundwater/surface water monitoring locations will be sampled as part of the MNA program along the plume axes moving from the Pad 5 area to the DRMO and down to the Rocky Spring area.

The number of sampling points and frequency are expected to decrease after contaminant trends become established and as concentrations fall below protection standards. This reduction in sampling points and frequency is expected to occur after the first five-year review is completed.

The proposed technical approach for PDO OU 2 would provide the following benefits:
- a timely transfer of the Phase VI BRAC parcel due to the PDO split. If the PDO split was not imposed, the Phase VI

BRAC parcel could not be transferred until groundwater contamination in PDO OU 4 (OBP) was addressed,
- a timely transfer of Phase VI BRAC parcel due to inclusion of all Phase VI sites into one FS, one PP, one ROD, and one FOST.

Site ID: LEAD-036
Site Name: LANDFILL 2 (48-52) (AREA J)
Alias: SE OU 9

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Soil

Phases	Start	End
PA	198001	198602
SI	198001	198602
RI/FS	199101	201409
RD	201409	201503
IRA	200107	200108
RA(C)	201409	201509
RA(O)	201509	201902
LTM	201903	204503

RIP Date: 201509

RC Date: 201902

SITE DESCRIPTION

Landfill J (OU 9) was initially identified in the 1980 interim action (IA). One area (south of Bldg 320) was determined to contain VOC soil contamination. The 1993 southeast OU 3 RI Report concluded that Landfill J did not exist; however, in the winter of 1995, a private contractor installing a water line extension behind Bldg 320 encountered garbage. In January 1996, exploratory excavations were conducted behind Bldg 320. These excavations determined that this area contained a landfill. Excavated materials included medical waste, drugs, laboratory chemicals, and old engine and vehicle parts. One shallow area was mainly composed of construction debris. This area was thought to have been created from leftover materials from the construction of Bldg 320. Shallow groundwater preferentially flows from the vehicle storage area (shale) into the waste layer before draining into the underlying limestone bedrock.

In July 2000, a soil gas survey was conducted. TCE was found in a specific area. In August 2000, cross-trenching and sampling of about 1,200 cubic yards (cy) was conducted to delineate the area. Data validation efforts for this OU are completed.

Through sampling and analysis at Area J, a "hot spot" of TCE was identified in the northern portion of Area J. In July 2001 a hot spot removal was conducted in two different areas. The materials in one area were identified and disposed of as hazardous waste (D040 and D008). The materials in the other area were identified and disposed of as nonhazardous waste. These areas were remediated to levels below the soil to groundwater pathway and Industrial RBCs. The area is currently used to store military vehicles.

After multiple conference calls and meetings, the Army agreed to acknowledge the Pennsylvania landfill closure regulations as ARARs and the regulators agreed to accept two feet of shale cover at Landfill J. The Pennsylvania Landfill Closure regulations will be identified as ARARs in the FS for southeast OU 9. Weston will be evaluating the existing landfill cover during 2012-2013 as a mod to the PBA contract.

CLEANUP/EXIT STRATEGY

The remedy for LEAD-036 will be selected in the SE OU 9 ROD. LUCs are expected to be implemented to allow only commercial/industrial-land use and prohibit unrestricted use (i.e., residential, day care). The Army has agreed to acknowledge the Pennsylvania landfill closure regulations as ARARs.

Weston evaluated the existing landfill cover at Landfill J. The Army is proposing shale as the landfill cover to allow continuance of vehicle storage on the Landfill J site. Additional shale covering will be installed as necessary across the site to ensure there is a minimum 2 foot layer across the entire landfill. Annual inspections and reports will be required to ensure integrity of landfill cover.

Site ID: LEAD-036
Site Name: LANDFILL 2 (48-52) (AREA J)
Alias: SE OU 9

A groundwater FS may recommend either in situ bioremediation or small scale pump and treat to address the VOC groundwater contamination.

Site ID: LEAD-039
Site Name: LANDFILL 5 (64-?) (AREA G), SECURITY
Alias: SE OU 12

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Volatiles (VOC)

Media of Concern: Groundwater, Soil, Surface Water

Phases	Start	End
PA	198001	198602
SI	198001	199501
RI/FS	199810	201209
RD	201212	201309
IRA	200710	200801
RA(C)	201310	201312
LTM	201312	204301

RIP Date: N/A

RC Date: 201312

SITE DESCRIPTION

This site covers approximately 0.5 acres and is located in the AA. The LEAD interim action (IA) identified this area as active from 1964 through 1978, when it was graded to match the existing terrain. It was used to dispose of trash burning pit residue and IWTP sludge. Visibly contaminated leachate (metals) was reported to (and continues to) emanate from this site into a nearby stream. Aerial photographs from 1965 do not reveal landfilling activities at this site; however, aerial photographs from 1970 confirm disposal activities here. A retired LEAD worker identified this area as containing buried drums.

Three retired employees stated that five to 60 ft from the back of the pistol range is where trenches were bulldozed and drums of TCE were dumped from Bldg 350.

A 1991 site inspection (SI) identified several magnetic anomalies. In 1993, these anomalies were cross-trenched. All anomalies were related to buried metallic objects. One area contained buried safe and empty drums that formerly contained caustics. Sampling indicated that these buried, empty drums had not caused a release to the environment. This area is believed to be the area referred to by the former employees. Another anomaly contained an area of paint cans and solvent containers. A RA was performed in this area.

The 1995 SI follow-on report identified this site as requiring an RI. In summer 2002, a work plan was submitted and issues with the contractor performing this work caused the contract to be cancelled. A new contractor came on board in 2005 and, in summer 2006, the first phase of fieldwork was completed. The second phase was completed in the winter of 2007 including an IRA consisting of soil removal in January 2008.

After multiple conference calls and meetings, the Army agreed to acknowledge the Pennsylvania landfill closure regulations as ARARs. The Pennsylvania landfill closure regulations will be identified as ARARs in all future CERCLA documents. Weston will be evaluating the existing landfill cover during 2012-2013 as a mod to the PBA contract

The performance objective for LEAD-039, as defined in the statement of objectives (SOO) for the LEAD PBA, is RIP or RC by June 30, 2014.

CLEANUP/EXIT STRATEGY

The remedy for LEAD-039 is LUCs restricting site to commercial/ industrial reuse which is currently documented in the Letterkenny Master Plan.

In addition, a two-foot cover will be placed over Landfill G. Annual inspections and reports will be required to ensure the integrity of the landfill cover and the commercial/industrial restriction.

Site ID: LEAD-040
Site Name: OPEN TRENCH LANDFILL ADJ TO TBR
Alias: PDO OU 4

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA	198001	198602
SI	198001	198602
RI/FS	199603	201406
RD	201310	201503
RA(C)	201503	201506
LTM	201601	204601

RIP Date: N/A

RC Date: 201506

SITE DESCRIPTION

This landfill (PDO OU 4) is located south of the transfer/burning revetments (TBR). It operated until the late-1970s. Items buried here include periscopes, fluorescent light tubes, and empty cans including pesticides, solvents, and paints. VOC- contaminated groundwater has been discovered downgradient from the landfill. Soil sampling has been completed. The RI/FS report includes LEAD-040, LEAD-044, LEAD-048, and LEAD-112.

The Army successfully negotiated with the USEPA and the PADEP to split the PDO area groundwater into two OUs. The PDO OU 4 area extends north from the railroad spur east of the DRMO into the AA and Meghan Mackenzie Run (MMR) north of Georgia Avenue. The primary COC in PDO OU 4 groundwater is 1,1,1-TCA.

The following LEAD PDO area sites included in the Army Environmental Database-Restoration (AEDB-R) site summary are located within the footprint of PDO OU 4 groundwater:
- LEAD-010: OBP
- LEAD-040: open landfill adjacent to transfer/burning revetments
- LEAD-044: revetted area north of burning pits
- LEAD-048: transfer/burning revetments

After multiple conference calls and meetings, the Army agreed to acknowledge the Pennsylvania landfill closure regulations as ARARs. The Pennsylvania landfill closure regulations will be identified as ARARs in all future CERCLA documents. Weston will be evaluating the existing landfill cover during 2012-2013 as a mod to the PBA contract.

The performance objective for LEAD-040, as defined in the SOO for the LEAD PBA, is RIP or RC by June 30, 2014.

CLEANUP/EXIT STRATEGY

The sampling data for LEAD-040, LEAD-044, and LEAD-048 indicate that the human health and ecological risks are within acceptable levels based on the intended future use of the property. The proposed remedy for LEAD-040 includes LUCs allowing only commercial and industrial land use and prohibiting unrestricted use (i.e., residential, day care) as documented in the Letterkenny Master Plan.

In addition a two-foot soil cover will be placed over Landfill G. Annual inspections and reports will be required to ensure integrity of the landfill cover and the commercial/industrial reuse.

The cost of LUCs over the 30-year project life cycle will be less than the costs associated with treatment or removal and disposal of soil and post-removal characterization sampling at LEAD-040.

Site ID: LEAD-044
Site Name: REVETTED AREA NORTH OF BURNING PITS
Alias: PDO OU 4

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA	198001	198602
SI	198001	198602
RI/FS	199710	201406
RD	201202	201409
RA(C)	201202	201412
LTM	201501	204501

RIP Date: N/A

RC Date: 201412

SITE DESCRIPTION

This area (PDO OU 4) is located north of TBR. The site was used to store drums of solvents prior to off-site disposal by a private contractor. Soil results exceeded residential standards, but are acceptable for commercial/industrial reuse. The RI/FS report includes LEAD-040, 048, and 112.

The Army has successfully negotiated with the USEPA and the PADEP to split the PDO Area groundwater into two OUs. The PDO OU 4 area extends north from the railroad spur east of the DRMO into the AA and MMR north of Georgia Avenue. The primary COC in PDO OU 4 groundwater is 1,1,1 trichloroethane (1,1,1-TCA).

The following LEAD PDO Area sites included in the AEDB-R site summary are located within the footprint of PDO OU 4 groundwater:
- LEAD-010: OBP
- LEAD-040: open landfill adjacent to TBR
- LEAD-044: revetted area north of burning pits
- LEAD-048: TBR

The performance objective for LEAD-044, as defined in the SOO for the LEAD PBA, is RIP or RC by June 30, 2014.

CLEANUP/EXIT STRATEGY

The sampling data for LEAD-040, LEAD-044, and LEAD-048 indicates that the human health and ecological risks are within acceptable levels based on the intended future use of the property. The remedy for LEAD-044 includes LUCs allowing only commercial/industrial land use and prohibiting unrestricted use (i.e. residential, day care) as documented in Letterkenny Master Plan.

The cost of LUCs over the 30-year project life cycle will be less than the costs associated with treatment or removal and disposal of soil and post-removal characterization sampling at LEAD-044.

Site ID: LEAD-048
Site Name: TRANSFER/BURNING REVETMENTS
Alias: PDO OU 4

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA	198001	198602
SI	198001	198602
RI/FS	199710	201406
RD	201202	201409
IRA	200712	200803
RA(C)	201202	201412
LTM	201501	204501

RIP Date: N/A

RC Date: 201412

SITE DESCRIPTION

TBR (PDO OU 4) were used for open burning of uncontaminated trash. Open burning was halted in the early-1980s. The pits were then used for storing scrap wooden crates and pallets and a section was used to store empty paint cans. In the early-1990s the paint cans were properly disposed of. In 2002, the wood was removed and composted. Currently the site surface is covered with decomposing wood and one revetment contains a burnt ash pile. In 2003, soil sampling was completed and groundwater sampling is ongoing. The RI/FS report includes LEAD-040, 044, and 112.

The Army has successfully negotiated with the USEPA and the PADEP to split the PDO area groundwater into two OUs. The PDO OU 4 area extends north from the railroad spur east of the DRMO into the AA and MMR north of Georgia Avenue. The primary COC in PDO OU 4 groundwater is 1,1,1-TCA.

The following LEAD PDO area sites included in the AEDB-R site summary are located within the footprint of PDO OU 4 groundwater:
- LEAD-010: OBP
- LEAD-040: open landfill adjacent to TBR
- LEAD-044: revetted area north of burning pits
- LEAD-048: TBR

The performance objective for LEAD-048, as defined in the SOO for the LEAD PBA, is RIP or RC by June 30, 2014.

As of January 2008, the following work pertaining to the ash removal at the TBR was completed. On Dec.3 and Dec. 4, 2008 site preparation, including brush clearing, road upgrades and truck access area, E and S controls, and exposure of the ash pile was conducted. During the period from Dec. 10, 2008 through Dec. 18, 2008, 2,475 tons of ash material was excavated, transported and disposed of nonhazardous waste at Blue Ridge Landfill in Scotland, Pennsylvania.

CLEANUP/EXIT STRATEGY

LUCs will be implemented to allow only commercial/industrial land use and prohibit unrestricted use (i.e., residential, day care) as documented in the Letterkenny Master Plan.

The cost of removal, transport, and disposal of the ash material, with LUCs, over the 30-year project life cycle will be less than the costs associated with treatment or removal and disposal of sediments throughout the PDO area. The proposed technical approach for LEAD-048 provides for the timely transfer of the Phase VI BRAC parcel due to interim removal action at LEAD-048 to address ongoing source of contaminants causing excess ecological risk in terrestrial habitats in drainageways downgradient of the site.

Site ID: LEAD-050
Site Name: TNT WASHOUT PLANT
Alias: AMMO

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	198001	198602
SI	199005	199501
RI/FS	200604	201209
RD	201209	201303
RA(C)	201302	201303
RA(O)	201302	201303
LTM	201303	204403

RIP Date: 201303

RC Date: 201303

SITE DESCRIPTION

This site was used from 1948 to 1962 to wash TNT out of projectiles and reclaim TNT. The original plant consisted of a closed system that filtered the process water through sawdust and wood shavings. Although the plant was considered a closed system, some filtered wastewater was released to a nearby intermittent stream via overflow valves on the storage tank.

An upgraded facility operated from 1969 to 1975 and also used a closed system that filtered rinse water through sawdust, fiberglass, and activated charcoal. The water was then stored in a storage sump for reuse. Interviews of LEAD employees who worked at the TNT washout plant stated that once a month (during operational periods) the large storage water sump was pumped into a ditch beside the building using a pump and a fire hose. Later, a piping system was plumbed into the building to perform this task.

In 1975, operations ceased at the TNT Washout Plant. In 1981, the wastewater (7,500 gallons) and sediments in the sump were sampled and found to contain explosives. The sump was emptied, cleaned, and the materials disposed of.

The 1991, SI detected explosives in the soil and groundwater. The 1995 SI follow-on investigation detected cyclotrimethylenetrinitramine (RDX) four feet below ground surface at a concentration of 0.946 micrograms per gram in soil which is below the health-based screening levels. Concentrations of RDX (6.28 microgram per liter (ug/l)); 2,4- dinitrotoluene (0.466 ug/l) and 2,4,6-TNT (8.16 ug/l) were detected in groundwater.

In August 2007, a PBA was awarded to Weston to address this site. All ER,A costs are now under site LEAD-PBA. All Ammunition Area RA(O) Costs (LTM) are rolled into LEAD-050.

The performance objective for LEAD-050, as defined in the SOO for the LEAD PBA, is RIP or RC by June 30, 2014.

CLEANUP/EXIT STRATEGY

The remedy at the TNT Washout Plant is LUCs restricting the site to commercial/ industrial reuse as already documented in the Letterkenny Master Plan. Annual inspections and reports will be required to ensure that the LUC is effective.

Site ID: LEAD-052
Site Name: DISPOSAL AREA TRENCHES (AREA K)
Alias: SE OU 1

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Petroleum, Oil and Lubricants (POL), Polychlorinated Biphenyls (PCB), Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	198001	198602
SI	198001	198602
RI/FS	198510	199207
RD	199211	199303
RA(C)	199307	199711
LTM	199807	204407

RIP Date: N/A

RC Date: 199806

SITE DESCRIPTION

The K-Areas (SE OU 1) were used to dispose of liquid waste generated from LEAD activities. The K-1 Area (or K-1 Lagoon) was used to dispose of waste solvents used in painting, paint stripping, and degreasing operations at LEAD. The K-1 Area was in use from 1957 to 1970. Its dimensions were approximately 200 by 50 feet. The area of VOC-impacted soil was approximately 78 by 189 ft.

The K-2 Area was in use from 1965 to 1970 and included five partially revetted areas used to accumulate solid waste prior to disposal into a nearby landfill. Its dimensions were approximately 270 by 75 feet. It appears that when the K-1 lagoon was closed, some soil from K1 ended up at K-2. The area impacted at K-2 was 60 by 20 by about 10 ft deep.

From 1965 to 1970, the K-3 Area was use as a drum storage area; it covered an overall area of approximately 100 ft by 40 ft. Based on available soil analytical data, the actual contaminated area was limited to a 50 by 50 foot area. The K-Areas were located in the disposal area (DA) of LEAD.

In 1983, an RI identified that the K-Areas contained high levels of VOCs. In 1989, a DA-wide soil gas investigation identified high levels of VOCs in the vadose zone soils of the K-Areas. In 1992, the boundaries of the K-Areas were delineated. K-1 contained up to 5.5 percent TCE and lead up to 1.5 percent. PCBs and semi-volatile organic compounds (SVOCs) were also discovered.

In August 1991, an accelerated RA ROD was signed. The RA started in July 1993 and was completed in October 1995. The VOC contaminated soils were excavated, treated with low temperature thermal desorption, returned to the site, and capped (geomembrane) as a Class II residual waste landfill. Lead-contaminated soils were stabilized and returned to the site (only those areas that exceeded the PADEP lead standards for a Class II Landfill). The RA addressed all environmental concerns of this OU. VOC-contaminated groundwater at this site will be addressed by OU 3, southeast on-post contaminated groundwater.

In 2000, the cap maintenance and inspection plan was finalized. In April 2004, an explanation of significant differences (ESD) was completed.

The performance objective for LEAD-052, as defined in the SOO for the LEAD PBA, is RIP or RC by June 30, 2011. RC has been achieved for LEAD-052.

CLEANUP/EXIT STRATEGY

The remedy selected in the signed ROD is described below.

LTM will be performed annually (cap inspection; necessary maintenance). The Army will institute LUCs restricting site to commercial/industrial-use as documented in Letterkenny Master Plan.

Site ID: LEAD-052
Site Name: DISPOSAL AREA TRENCHES (AREA K)
Alias: SE OU 1

The remedy for LEAD-052 was selected in the SE OU 1 ROD and included thermal remediation of contaminated soils (completed in 1995) and a cap. A ROD required LTM (cap inspection and maintenance) is ongoing. There are no uncertainties associated with LEAD-052.

This site is included in the LEAD PBA that extends through 2014.

Site ID: LEAD-053
Site Name: BURNING GROUND 2 (SWMU 58)
Alias: AMMO

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Soil

Phases	Start	End
PA	198001	199007
SI	199005	199501
RI/FS	200606	201209
RD	201209	201303
RA(C)	201302	201303
RA(O)	201302	201303
LTM	201303	204303

RIP Date: 201303

RC Date: 201303

SITE DESCRIPTION

Burning Ground 2 (AMMO) is located adjacent to Demolition Ground No. 2. The site reportedly became operational in 1945 and is currently in RCRA Interim Status. The area under investigation is the pathway from the SWMU 58 boundary to the pond. A RCRA Subpart X Application has been filed for this site. Since then, a change in the process had occurred dating back to 1985. The southern portion of the site, the pan area, has been used to burn propellant in pans. Residue in the pans is drummed, characterized, and disposed off-site.

The northern portion of the site, the rail area, has not been used to burn projectiles for 10 or more years. In the past, propellant had been burned directly on the ground and the residue buried at the Residue Burial site. Diesel fuel was reportedly used to promote burning. A northwest to southeast trending shallow drainage swale separates the rail area from the pan area. Drainage in the swale flows toward the northwest.

Metals and explosives above screening levels were discovered in runoff samples. Metals were detected above screening levels in soil (lead) and manganese was detected in groundwater. Explosives in soils and groundwater did not exceed screening values. Metals in soil are the primary concern. LUCs and LTM is expected to begin in FY13.

The performance objective for LEAD-053, as defined in the SOO for the LEAD PBA, is RIP or RC by June 30, 2014.

CLEANUP/EXIT STRATEGY

The remedy is LUCs which restrict site to commercial/industrial use only and prohibit unrestricted use (i.e. residential, day care) as already documented in Letterkenny Master Plan.

This site is included in the LEAD PBA that extends through 2014. LUCs and LTM phases are captured under the PBA site.

Site ID: LEAD-076
Site Name: SE OFFPOST GROUNDWATER - IR
Alias: SE OU 6

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA	198001	198602
SI	198603	199306
RI/FS	199310	201312
RD	200709	201409
RA(C)	200709	201503
RA(O)	201501	201803

RIP Date: 201503

RC Date: 201803

SITE DESCRIPTION

Various activities and past practices at LEAD have contaminated the SE on- and off-post groundwater with VOCs. In 1993 southeast OU 6 was created to address the off-post groundwater. SE on-post groundwater is being addressed by SE OU 3A and OU 11. On-post and off-post groundwater are intimately linked.

The former IWTP Lagoons (LEAD-013) were closed under RCRA. As required by Pennsylvania's RCRA law, a GWAAP was prepared. Response actions recommended in the draft GWAAP were:
- groundwater monitoring,
- source soils removal,
- groundwater treatment , and
- treatment of Rowe Spring (off-post).

By 1993, the Army had completed items one through three and, in that year, a flow study of Rowe Spring (LEAD 068) commenced. A series of stream monitoring stations were installed above and below Rowe Spring to accurately measure spring flow and a final (99 percent confidence interval) flow of 1,680 gpm has been established for Rowe Spring. Helman (LEAD 086), Helman East (LEAD 087), and Witmer Spring (LEAD 088) contribute another 1,600 gpm. Nelson spring (LEAD-096) and Nelson spring East (LEAD-104) are ephemeral springs that contribute up to 200 gpm in periods of high groundwater. In June 1996 a conceptual design for the Rowe Spring groundwater treatment plant was produced and in 1998 property acquisition was completed. In 1999 a final design was produced. In June 2000, a pilot study using micro-bubble in situ stripping was completed. This pilot showed that the flow of Rowe Spring could be treated in situ (reducing operating costs 75 percent).

In summer 2004, a draft final RI/RA was completed. Further meetings will be scheduled to address any future biological technical assistance group (BTAG) issues or comments.

Starting in 1985, the Army provided public water to all residences whose drinking water supply exceeded a MCL.

LTM is expected beginning in FY14. All effort associated with this future phase is tracked under LEAD-PBA.

The performance objective for SE OUs 3A, 6, and 11, as defined in the SOO for the LEAD PBA, is RIP or RC by June 30, 2014.

CLEANUP/EXIT STRATEGY

A single ROD will be developed to cover SE OU 3A, OU 6 and OU 11 and is currently funded under LEAD-076. LEAD will continue to monitor groundwater to protect off-post well users. On-post groundwater (SE OU 11) is currently being treated under LEAD-131.

Site ID: LEAD-076
Site Name: SE OFFPOST GROUNDWATER - IR
Alias: SE OU 6

The proposed remedy for SE OU 3A, OU 6, and OU 11 includes:
- obtaining a front-end TI Waiver for a portion of the groundwater plume based on the significant mass of non-aqueous phase liquid (NAPL) in fractured, karst bedrock, which would critically limit the restoration potential of the aquifer,
- implementing ISCO technology as an ARS to destroy contaminant mass in the NAPL source areas remaining in SE OU 3A and SE OU 11. (The ARS is to simultaneously implement the ISCO treatment at all three source areas identified in SE OU 3A and 11 so that economies of scale with amendments, mobilization, and sampling costs can be realized for the Army. In addition, the resulting benefit of the ISCO treatments will become more evident at the proposed monitoring locations where the contaminant mass flux will be monitored following application. The proposed full-scale ISCO program will target the shallow and intermediate bedrock aquifer zones in each OU. A series of approximately 27 injectors in SE OU 3A and 14 injectors in SE OU 11 are proposed for installation. Existing injector locations/ wells from the ISCO pilot studies previously conducted in these areas will also be used during the full-scale program. Two full-scale applications are expected to be sufficient to demonstrate significant contaminant destruction.),
- establishing long-term LUCs on groundwater use within the agency-accepted TI zone where groundwater ARARs will be waived,
- establishing a set of 12 groundwater/ surface-water monitoring locations as points of compliance in the combined areas of SE OU 3A, SE OU 11, and SE OU 6 along the plume axes moving from indicator wells in the source areas and out to the Rowe Run area springs. (The purpose of the LTM program will be to document the continued natural attenuation of the plumes out to Rowe Spring following implementation of the source area treatment programs, which are planned to be performed concurrently in the remedial strategy. The number of sampling points and frequency is expected to decrease substantially after the ARS is implemented and sampling has shown that the contaminant plume is not expanding. This reduction in sampling points and frequency is expected to occur after the first five-year review is completed.)

This site is included in the LEAD PBA that extends through 2014.

Site ID: LEAD-077
Site Name: PDO OFFPOST GROUNDWATER
Alias: PDO OU 2

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA	198001	198602
SI	198602	198902
RI/FS	199403	201309

RIP Date: N/A

RC Date: 201309

SITE DESCRIPTION

In July and December 1994, and July 1995, the Army conducted follow-up sampling of 14 off-post residential wells. Groundwater levels were measured in the residential wells and PDO area wells during each of the three sampling periods and the local geology/hydrology was evaluated to help characterize groundwater flow patterns in the area. Results of this sampling were sent to each respective resident. The results did not indicate that the PDO area groundwater is affecting any off-post residential wells except for the Carty well occasionally (sub-MCL levels), during low groundwater conditions.

No VOCs exceeded MCLs, and none of the VOCs which are consistently detected in the contaminated groundwater of the PDO area, were detected in any of the residential wells (besides the Carty well).

As part of this effort in the PDO area, the Army performed geological mapping of the off-post residential well area using on-site data gathered in the field as well as hydrogeological data. A local geology description is included in the May 30, 1997, draft RI report for the PDO area.

The draft PDO RI report recommended that several of the residential water supply wells closest to the LEAD boundary be monitored for VOCs during low water table conditions. The off-post residential wells are located upgradient of the LEAD groundwater. The gradient normally is towards LEAD (groundwater flows from off-post towards LEAD). During periods of low groundwater levels there was a possibility that the gradient would reverse (LEAD groundwater would flow off-post). This phenomenon has only been demonstrated at the Carty well.

In August 2007, a PBA was awarded to Weston to address all remaining BRAC and ER,A actions. This contract includes the RA(O) sampling for PDO OU 2. The MNA/RA(O) monitoring program for LEAD-029 and LEAD-077 is now being rolled into LEAD-093.

In late August 1997, LEAD contacted the owners of the residential wells to arrange for the sampling recommended by the RI report. On Aug. 27, 1997 the USEPA requested, and LEAD agreed, to include PCB analysis of the water samples as a screen and to provide information for the ongoing PDO Area OU 5 fieldwork. Analysis of the samples was performed using the USEPA Contract Laboratory Program procedures. On Sept. 3, 1997 the well sampling began.

In May 1999, LEAD completed installation of two piezometers (PDO99PZ1 and PDO99PZ2) and in May and June, sampling of five wells (Carty, Fitz, Letterkenny Park, 1383, and Rocky Spring house) at LEAD was completed.

There had been detections of benzene in 10 off-PDO residential drinking water wells and detections of lead above action levels in three off-PDO residential drinking water wells (ESE 1993 RI report for PDO). Three rounds of additional off-post sampling did not detect benzene in any well. This investigation showed that all of the homes affected were hydraulically upgradient of LEAD. The detection in the off-PDO wells was determined to be the result of a laboratory accident.

The detections of lead in three off-PDO area wells were determined to be plumbing related (lead or brass plumbing components). These homes were hydraulically upgradient of LEAD as well.

In January 2004, the LTM letter report was submitted for OU 2, OU4A and OU4B. This summarizes to date the LTM of the off-

post residential wells on the PDO side of LEAD. From January 2002 through April 2003 groundwater samples were collected monthly. Samples were analyzed for target compound list VOCs.

The performance objective for LEAD-077, as defined in the SOO for the LEAD PBA, is RIP or RC by September 2013.

CLEANUP/EXIT STRATEGY

LEAD-077 will be addressed by the remedy for PDO OU 2 groundwater under LEAD-029. Over ten years of data at the Rocky Spring House indicate that VOC concentrations are steadily declining, thus confirming natural attenuation of the VOC contaminated groundwater. The remedy will consist of MNA, LTM, and IC (which includes five-year reviews).

Off-post migration will continue to be monitored through sampling and groundwater height monitoring. Any instances of a shift in the groundwater gradient will be identified. Key off-post monitoring locations will be the Carty well and wells located adjacent to the Rocky Spring trailer park.

Site ID: LEAD-079
Site Name: WASTE DISPOSAL TRENCHES AREA A
Alias: SE 0U 5

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA	198001	198602
SI	198001	198602
RI/FS	199310	201409
RD	201409	201412
IRA	199607	199608
RA(C)	201412	201503
LTM	201503	204503

RIP Date: N/A

RC Date: 201503

SITE DESCRIPTION

This site consists of a series of trenches for solid waste disposal. Contaminated soils were removed in 1996. Following the completion of the RI/FS, the site will be addressed under a ROD including sites LEAD-009 and 105 which make up SE OU 5. After multiple conference calls and meetings, the Army agreed to acknowledge the Pennsylvania landfill closure regulations as ARARs. The Pennsylvania landfill closure regulations will be identified as ARARs in all future CERCLA documents. Weston will be evaluating the existing landfill cover during 2012 and 2013 as a mod to the PBA contract.

CLEANUP/EXIT STRATEGY

Following the completion of the RI/FS, The site will be closed under a ROD including sites LEAD-009 and LEAD-105 which make up SE OU 5. The FS, PP and ROD are being picked up by the PBA contractor to complete the review reporting process.

The Army agreed to acknowledge the Pennsylvania landfill closure regulations as ARARs. Weston will be completing a landfill cover evaluation during 2012 and 2013 under a mod to the PBA contract. Based on this evaluation a soil cover is planned for Area A.

Engineering controls and LUCs will be placed into effect to ensure the cap integrity and commercial/industrial-use of the site.

Site ID: LEAD-081
Site Name: SE ONPOST GROUNDWATER - IR
Alias: SE OU 3A

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA	198001	198602
SI	198603	198902
RI/FS	198903	201312
RD	201401	201409
RA(C)	201409	201503
RA(O)	201504	204504

RIP Date: 201504

RC Date: 204504

SITE DESCRIPTION

Southeast OU 3A addresses on-post VOC-contaminated groundwater (LEAD 081). This OU has been broken down into two sections based on southeast groundwater divides: 3A (Active), the DA and 3B (BRAC), the groundwater upgradient of the southeast Disposal Area. VOC-contaminated groundwater from this area discharges into six springs located up to 1.8 miles off-post. Rowe Spring is the primary receptor.SE OU 11 was developed to address the lagoon area, which is a different source from the DA area.

In the DA, 15,000 cy of VOC-contaminated soil were removed without visible effect on groundwater quality (LEAD-052: K Areas). The majority of the contamination still remains in the bedrock matrix. In July 1999, a Fenton's reagent injection pilot study was completed. Earlier pilot studies of recirculating and in situ stripping were not as effective as the Fenton's reagent injection.

Monitoring associated with the RA(O) phase is expected to begin in FY15.

The performance objective for southeast OUs 3A, 6, and 11, as defined in the SOO for the LEAD PBA, is RIP or RC by June 30, 2014. All five-year review costs for LEAD will be rolled into LEAD-081.

CLEANUP/EXIT STRATEGY

The proposed remedy for SE OU 3A, OU6, and OU11 includes the following:
- obtaining a front-end TI waiver for a portion of the groundwater plume based on the significant mass of NAPL in fractured, karst bedrock, which would critically limit the restoration potential of the aquifer,
- implementing ISCO technology an ARS to destroy contaminant mass in the NAPL source areas remaining in SE OU 3A and SE OU 11. (The ARS is to simultaneously implement the ISCO treatment at all three source areas identified in SE OU 3A and 11 so that economies of scale with amendments, mobilization, and sampling costs can be realized for the Army. In addition, the resulting benefit of the ISCO treatments will become more evident at the proposed monitoring locations where the contaminant mass flux will be monitored following application. The proposed full-scale ISCO program will target the shallow and intermediate bedrock aquifer zones in each OU. A series of approximately 27 injectors in SE OU 3A and 14 injectors in SE OU 11 are proposed for installation. Existing injector locations/ wells from the ISCO pilot studies previously conducted in these areas will also be used during the full-scale program. Two full-scale applications are expected to be sufficient to demonstrate significant contaminant destruction),
- establishing long-term LUCs on groundwater usage within the agency-accepted TI zone where groundwater ARARs will be waived,
- implementing an LTM program to document the natural attenuation of the dissolved-phase portion of the groundwater plume after implementation of the ARS to demonstrate that the plume is continuing to decline in both concentration and lateral extent (retracting), as well as at the surface-water discharge locations in the Rowe Spring area, and
- establishing a set of 12 groundwater/ surface-water monitoring locations for points of compliance in the combined areas of

Site ID: LEAD-081
Site Name: SE ONPOST GROUNDWATER - IR
Alias: SE OU 3A

SEOU 3A, SE OU 11, and SE OU 6 along the plume axes moving from indicator wells in the source areas and out to the Rowe Run area springs. The purpose of the LTM program will be to document the continued natural attenuation of the plumes following implementation of the source area treatment programs, which are planned to be performed concurrently in the remedial strategy. The number of sampling points and frequency is expected to decrease substantially after the ARS is implemented and sampling has shown that the contaminant plume is not expanding. This reduction in sampling points and frequency is expected to occur after the first five-year review is completed.

This site is included in the LEAD PBA that extends through 2014.

Site ID: LEAD-083
Site Name: INDUSTRIAL WASTE SEWERS-SOILS - IR
Alias: SE OU 2

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	198001	198602
SI	198001	198602
RI/FS	199310	200509
IRA	199608	199708
LTM	200810	204409

RIP Date: N/A

RC Date: 200509

SITE DESCRIPTION

Industrial sewer waste lines have leaked in the past causing soil contamination (VOCs). An IRA consisting of VOC-contaminated soil removal was conducted from FY96 - FY97 in the Bldg 370 area. Groundwater contamination resulting from this site will be addressed under LEAD-131 (SE OU 11). The remedy of LUC restricting land use to commercial/industrial is underway.

CLEANUP/EXIT STRATEGY

A RA of a LUC restricting land use to commercial/industrial is underway for LEAD-083. As stated above the groundwater contamination resulting from this site will be addressed under LEAD-131 (SE OU 11).

Site ID: LEAD-106

Site Name: DRMO SCRAPYARD - PCB'S, METALS, ASBESTOS

Alias: PDO OU 5

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Asbestos, Metals, Polychlorinated Biphenyls (PCB)

Media of Concern: Sediment

Phases	Start	End
PA	198001	198602
SI	198001	198602
RI/FS	199610	200503
IRA	199904	200005
LTM	200504	201711

RIP Date: N/A

RC Date: 200503

SITE DESCRIPTION

The DRMO scrapyard was a concern with regard to PCBs, metals, and asbestos. The runoff from the scrapyard flows to Rocky Spring Lake. An emergency removal of PCB-contaminated sediment was conducted in FY99.

This site is part of the PDO-OU 5 (LEAD-107 ROD) anticipated in September 2013.

CLEANUP/EXIT STRATEGY

LTM consists of ICs restricting site to commercial/industrial-use as documented in the LEAD Master Plan.

Site ID: LEAD-107
Site Name: ROCKY SPRING PCB SEDIMENTS
Alias: PDO OU 5

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Polychlorinated Biphenyls (PCB)

Media of Concern: Sediment

Phases	Start	End
PA	198001	198602
SI	198001	198602
RI/FS	199610	201309
RD	201202	201403
IRA	199904	200005
RA(C)	201302	201403
RA(O)	201501	204505

RIP Date: 201501

RC Date: 204505

SITE DESCRIPTION

The discovery of PCB-contaminated sediments discharging from Rocky Spring (LEAD-098) led to the creation of PDO OU 5, PCBs in the Rocky Spring system. The entire PDO area was sampled for PCBs starting in October 1997. PCBs were detected at levels of concern in the DRMO scrapyard and its downgradient drainageways.

PCBs (Aroclor 1260) in the Rocky Spring system at levels of concern were found in the drainageway downgradient of the DRMO scrapyard (13 ppm), and in a wetland area that has formed around a sinkhole (2 ppm).

In summer 2000, a dye study showed that the travel time across the Rocky Spring Valley is two days. In January 2002, field and biota sampling was completed. During 1999 and 2000 a interim soil removal was completed at the DRMO scrapyard. In 2001 and 2002 downstream sediments were removed as necessary.

Sediment in the sinkhole area is being addressed under the BRAC program.

The Army is continuing to measure the concentration of PCBs in the sediment from Rocky Spring. The concentration of PCBs in the sediment appears to be decreasing. Additional PCB sampling will be conducted to verify this decrease. This information will be used to determine the length of time PCB contaminated sediments will be discharged (at levels of concern).

In August 2007 a PBA was awarded to Weston to address all remaining BRAC and ER,A actions. This contract includes the RA(O) sampling for PDO OU 5. MNA/RA(O) monitoring is the proposed remedy for LEAD-107 and will be documented in the PDO OU2 ROD.

The performance objective for LEAD-107, as defined in the SOO for the LEAD PBA, is RIP or RC by June 30, 2014.

CLEANUP/EXIT STRATEGY

The Army, the USEPA, and the PADEP have agreed to address OU 2 and OU 5 remedies together in one ROD. When the ROD is finalized, the remedy for PCBs is expected to consist of Monitored Natural Recovery (MNR), LTM, and IC (which includes five-year reviews).

MNR will consist of annual sediment sampling at Rocky Spring springhouse, periodic fish sampling, drainage dithc improvements and LUCs to continue the catch and release fishing policy in Rocky Spring Lake. MNR will continue until PCBs are below detection limits in sediment samples collected from the Rocky Spring springhouse for three consecutive years.

The proposed technical approach for LEAD-107 would provide three benefits. There would be a timely transfer of Phase VI BRAC

Site ID: LEAD-107
Site Name: ROCKY SPRING PCB SEDIMENTS
Alias: PDO OU 5

parcel due to inclusion of all Phase VI sites into one FS, one PP, one ROD, and one FOST. Life cycle costs would be reduced through Weston negotiations with regulators to ensure that MNR and LUCs are acceptable and that no RA is necessary. And there would be a consistency with the approach presented by the Army to the public through LEAD's public involvement activities (i.e., RAB meetings).

A PBA (W91ZLK-05-D-0018) was awarded to Weston Solutions in August 2007 to address all remaining BRAC and Environmental Restoration, Army (ER,A) actions. This contract includes the remedial action (operation) [RA (O)] sampling for PDO OU 5. The MNA/RA (O) monitoring program for LEAD-107 along with MNA/RA (O) monitoring for LEAD-029 and LEAD-077 is now being rolled into LEAD-093, PDO OU 2 in the Weston contract.

This site will be transferred as part of the Phase VI property transfer. This site will be closed under the Phase VI parcel ROD (September 2013) that includes site LEAD-093.

Site ID: LEAD-112
Site Name: AMMUNITION DRUM PADS
Alias: PDO OU 8

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
RFA	199509	199609
CS	199710	199903
RFI/CMS	199903	201406
DES	201202	201409
CMI(C)	201202	201412
LTM	201501	204501

RIP Date: N/A

RC Date: 201412

SITE DESCRIPTION

The Ammo Drum Pad (PDO OU 8) was used to store nonhazardous waste drums; however, the pad was not permitted as a RCRA storage pad and the drums were stored for a period greater than 90 days. The RCRA closure report was finalized in 2011.

The ROD was signed in September 2012.

CLEANUP/EXIT STRATEGY

The remedy is ICs restricting site to industrial/commercial-use as documented in the LEAD Master Plan.

This site is included in the LEAD PBA that extends through 2014.

The five-year review will be funded under LEAD-081.

Site ID: LEAD-131
Site Name: IWTP LAGOON GROUNDWATER
Alias: SE OU 11

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA	198001	198602
SI	198603	198902
RI/FS	198903	201312
RD	201202	201409
IRA	198902	201409
RA(C)	201409	201503
RA(O)	201504	201803

RIP Date: 201504

RC Date: 201803

SITE DESCRIPTION

The original unlined lagoon (SE OU 11) was constructed in 1954 and operated until 1967. The lagoon was used as a settling/equalization basin for the IWTP. The groundwater below the lagoon area is contaminated with VOCs. This on-post VOC-contaminated groundwater migrates off-post (see SE OU 6) and eventually discharges into the Rowe Run Valley.

In December 2000, a pressurized ozone injection pilot study which proved to be effective was completed.

In winter 2001, a pilot study was completed to determine the feasibility of remediating VOCs in the groundwater at the lagoons using in situ chemical oxidation (i.e., Peroxone® - O3). The pressurized O3 increased the concentration of oxidant at the bedrock surface. Active remediation (i.e., oxidant introduction) would occur over a period of approximately three years. This potential treatment alternative will be evaluated along with other alternatives in the preliminary draft FFS scheduled for October 2007.

Additionally, the direct bedrock Peroxone pilot study at the IWTP lagoons included the installation of three injectors and six pilot wells. A dye study and pre-pilot study VOC sampling was conducted. The pilot study ran from late November to late December 2001. Preliminary results indicated that this technology may work at the lagoons.

Among the items addressed were:
- the interconnectivity of aquifer flow paths and rates of travel of non-reactive fluid,
- a determination of the initial injection flows for pilot oxidant fluids,
- the identification of the natural flow rates under the lagoons, and
- the evaluation and optimization of the chemical oxidation system design and operation.

Among the parameters to be assessed are the ability of oxidant to destroy COCs given matrix uptake, the number and configuration of injection and monitoring points, and the concentration and rate of Injection fluid.

In August 2007, a PBA was awarded to Weston to address all remaining BRAC and ER,A actions. All ER,A costs are now under site LEAD-PBA.

The data from the pilot study was used to further evaluate alternatives in the final FFS approved in October 2010. The current groundwater treatment plant (GWTP) is being used to treat VOC-contaminated groundwater in the lagoons area. Its operation was a condition associated with the GWAAP and RCRA closure of the lagoon, but it does not appear to be having a significant positive impact on groundwater quality. Therefore, verification and comparison of the concept and comparison to other technologies are essential to formulating a practical, cost-effective remedial strategy for reaching site closure within a reasonable time frame.

During October 2002, the Army initiated an ozone persistence test. The draft report on this test was completed in that month and the final report was produced in 2004.

Site ID: LEAD-131
Site Name: IWTP LAGOON GROUNDWATER
Alias: SE OU 11

Fieldwork for the FFS (SE OU 11) is completed. Installation of an additional on-post monitoring well was completed in fall 2005. Groundwater sampling has been conducted for high and low flow conditions. The final base flow condition sampling was completed in the winter of 2005. Final analysis from the groundwater sampling effort was completed in 2007.

An FFS addendum, technical feasibility report, and an FFS were produced for SE OU 11. It is the Army's position that no RA is feasible,practical, or possible unless the USEPA issues a front-end TI waiver for groundwater at SE OUs 3A, 6, and 11. An FFS with a TI waiver for groundwater at SE OUs 3, 6 and 11 has been prepared.

LEAD-131 is included in the LEAD_PBA that extends through 2014. All RA(O) monitoring will be tracked under LEAD-081. All five-year review costs will be tracked under LEAD-081.

CLEANUP/EXIT STRATEGY

The proposed remedy for SE OU 3A, OU6, and OU11 includes:
- obtaining a front-end TI waiver for a portion of the groundwater plume based on the significant mass of NAPL in fractured, karst bedrock, which would critically limit the restoration potential of the aquifer.
- implementing ISCO technology as an ARS to destroy contaminant mass in the NAPL source areas remaining in southeast OU 3A and SE OU 11. (The ARS is to simultaneously implement the ISCO treatment at all three source areas identified in SE OU 3A and 11 so that economies of scale with amendments, mobilization, and sampling costs can be realized for the Army. In addition, the resulting benefit of the ISCO treatments will become more evident at the proposed monitoring locations where the contaminant mass flux will be monitored following application. The proposed full-scale ISCO program will target the shallow and intermediate bedrock aquifer zones in each OU. A series of approximately 27 injectors in southeast OU 3A and 14 injectors in southeast OU 11 are proposed for installation. Existing injector locations/ wells from the ISCO pilot studies previously conducted in these areas will also be used during the full-scale program. Two full-scale applications are expected to be sufficient to demonstrate significant contaminant destruction.)
- establishing long-term LUCs on groundwater usage within the agency-accepted TI zone where groundwater ARARs will be waived,
- implementing an LTM program to document the natural attenuation of the dissolved-phase portion of the groundwater plume after implementation of the ARS to demonstrate that the plume is continuing to decline in both concentration and lateral extent (retracting), as well as at the surface water discharge locations in the Rowe Spring area, and
- establishing a set of 12 groundwater/surface water monitoring locations as points of compliance in the combined areas of SE OU 3A, SE OU 11, and SE OU 6 along the plume axes moving from indicator wells in the source areas and out to the Rowe Run area springs.

The purpose of the LTM program will be to document the continued natural attenuation of the plumes following implementation of the source area treatment programs, which are planned to be performed concurrently in the remedial strategy. The number of sampling points and frequency is expected to decrease substantially after the ARS is implemented and sampling has shown that the contaminant plume is not expanding. This reduction in sampling points and frequency is expected to occur after the first five-year review is completed.

Site ID: LEAD-132
Site Name: Former Test Track/Soil Storage Area
Alias: SE OU 14

STATUS

Regulatory Driver: CERCLA

RRSE: NOT EVALUATED

Contaminants of Concern: Metals, Petroleum, Oil and Lubricants (POL)

Media of Concern: Soil

Phases	Start	End
PA	197901	198001
SI	198001	198902
RI/FS	199509	201409
RD	201202	201503
RA(C)	201202	201506
LTM	201506	204406

RIP Date: N/A

RC Date: 201506

SITE DESCRIPTION

This site was formerly used as vehicle testing area and contaminated soil staging area (soil from Building 349 AST containment area). Site was originally part of BRAC site LEAD-114, but area is now being retained by Letterkenny. COCs are metals and POL. LEAD-132 will be rolled into a PP, a ROD, and an RD with SE OU 5 (LEAD-009 and 079).

CLEANUP/EXIT STRATEGY

LEAD-132 will be addressed in PP, ROD, and RD with LEAD-079. Remedy will be LUC consisting of commercial/industrial-use restriction as documented in the LEAD Master Plan. Annual LUC inspection and reporting will be required by ROD and detailed in the RD.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
LEAD-003	BUILDING 1	199407	Results of the investigation did not warrant any additional action. The RI report of the southeast area (June 1993) closes this site out. ESE produced this report. Report can be found on LEAD library site http://216.134.203.11/LETTERKENNYLIBRARY/Document No. (LKD.RT - 086).
LEAD-004	BUILDING 350	199407	Results of the investigation did not warrant any additional action. The RI report of the southeast area (June 1993) closes this site out. ESE produced this report. Report can be found on LEAD library site http://216.134.203.11/LETTERKENNYLIBRARY/Document No. (LKD.RT - 086).
LEAD-005	BUILDING 351	199407	Results of the investigation did not warrant any additional action. The RI report of the southeast area (June 1993) closes this site out. ESE produced this report. Report can be found on LEAD library site http://216.134.203.11/LETTERKENNYLIBRARY/Document No. (LKD.RT - 086).
LEAD-006	BUILDING 370	199407	Results of the investigation did not warrant any additional action. The RI report of the southeast area (June 1993) closes this site out. ESE produced this report. Report can be found on LEAD library site http://216.134.203.11/LETTERKENNYLIBRARY/Document No. (LKD.RT - 086).
LEAD-007	BUILDING 349	199407	Results of the investigation did not warrant any additional action. The RI report of the southeast area (June 1993) closes this site out. ESE produced this report. Report can be found on LEAD library site http://216.134.203.11/LETTERKENNYLIBRARY/Document No. (LKD.RT - 086).
LEAD-013	IWTP LAGOONS/AREA D/BLDG 360	199211	These Lagoons, constructed as part of industrial waste treatment plant, underwent a RCRA closure and removal of VOC contaminated soils using a low temperature thermal treatment. Results of the investigation did not warrant any additional action. The thermo treatment showed to be a success. The low thermo temperature report (February 1993) closes out the soil issue at the lagoons. Report can be found on LEAD library site http://216.134.203.11/LETTERKENNYLIBRARY/Document No. (LKD.RT - 081).
LEAD-014	BUILDING 3700 CHEMICAL LAB SS	199105	Results of the investigation did not warrant any additional action. The RI report of the southeast area (June 1993) closes this site out. ESE produced this report. Report can be found on LEAD library site http://216.134.203.11/LETTERKENNYLIBRARY/Document No. (LKD.RT - 060;

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			page 8-64).
LEAD-015	ACID BURNING PITS	199105	Results of the investigation did not warrant any additional action. The RI report of the southeast area (June 1993) closes this site out. ESE produced this report. Report can be found on LEAD library site http://216.134.203.11/LETTERKENNYLIBRARY/Document No. (LKD.RT - 060; page 8-1).
LEAD-016	COMBAT VEHICLE TEST TRACK	200503	
LEAD-017	PROJECTILE RANGE	198602	Study complete, No cleanup required. This site was closed out based on a verbal agreement with regulators. Written documentation will be obtained.
LEAD-018	CS TEST SITE	198602	The EA SI report No. 10559-23 November 1991 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/060-1.pdf (LKD.RT - 060).
LEAD-019	WEAPONS STORAGE AREA, IGLOOS	198602	Study complete, No cleanup required. This site was closed out based on a verbal agreement with regulators. Written documentation will be obtained.
LEAD-020	BUILDING 11 STORAGE OF RAD ITEMS	198609	NRC License Closure
LEAD-022	BUILDING 3223 RAD DISPOSAL STORAGE	198609	NRC License Closure
LEAD-024	TWO REVETMENTS IN PDO AREA	199108	The EA SI report No. 10559-23 November 1991 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/060-1.pdf (LKD.RT - 060).
LEAD-025	PREVIOUS PESTICIDE AREA, BUILDING G	199212	The ESE RI report January 1993 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/075.pdf (LKD.RT - 075).
LEAD-028	SMALL SEWAGE TREATMENT PLANT	198602	Study complete, No cleanup required. This site was closed out based on a verbal agreement with regulators. Written documentation will be obtained.
LEAD-030	DIGESTED SLUDGE SPREAD ON GROUND	199111	The EA SI report No. 10559-23 November 1991 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/060-1.pdf (LKD.RT - 060).
LEAD-031	BLDG 2357 LNDRY FOR ORDINANCE COMPOUNDS	198609	The EA SI report No. 10559-23 November 1991 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/060-1.pdf (LKD.RT - 060).
LEAD-032	INDUSTRIAL WASTE DITCH (ROWE RUN)	199611	Signed ROD May 2005 (Shaw Environmental) Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Li

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			b/docindex.htm Document No. (LKD.RT - 270)
LEAD-033	SEDIMENT BURIAL SITE (AREA F)	200408	Site was thought to be in the BRAC Excess Parcel; however, BRAC RI/FS found no evidence of soil contamination. Therefore it is felt that the Weston Soil removal in 1997 adjacent to the IWTP Outfall Ditch was the actual location of Area F. SE OU 2 ROD will document this decision.
LEAD-035	LANDFILL 1 (41-48) (AREAS H & I)	199308	The ESE SE OU 3 RI report ENAEC-IR-CR-93101 - June 1993 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/086-1.pdf (LKD.RT - 086).
LEAD-038	LANDFILL 4 (56-64) (AREA C)	199407	The ESE SE OU 3 RI report ENAEC-IR-CR-93101 - June 1993 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/086-1.pdf (LKD.RT - 086).
LEAD-041	BURIAL AREA FOR BERYLLIUM PHOS TUBES	199407	The ESE SE OU 3 RI report ENAEC-IR-CR-93101 - June 1993 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/086-1.pdf (LKD.RT - 086).
LEAD-042	NEUTRALIZATION PIT	199504	The EA SI report No. 10559-23 January 1995 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/102.pdf (LKD.RT - 102).
LEAD-043	RESIDUE BURIAL SITE (SWMU 57)	199105	The EA SI report No. 10559-23 November 1991 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/060-1.pdf (LKD.RT - 060).
LEAD-045	DEMO GROUND 1	199105	The EA SI report No. 10559-23 November 1991 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/060-1.pdf (LKD.RT - 060).
LEAD-046	DEMO GROUND 2	199501	This site is an active site and is not eligible for ER,A funding at this time.
LEAD-047	BURNING GROUND 1 (SWMU 56)	199105	The EA SI report No. 10559-23 November 1991 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/060-1.pdf (LKD.RT - 060).
LEAD-049	OIL BURNING PIT USED IN 70'S (AREA E)	200409	Site was thought to be in the BRAC Excess Parcel. However, BRAC RI/FS found no evidence of soil contamination. Therefore it is felt that the Weston Soil

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			removal in 1997 adjacent to the IWTP Outfall Ditch was the actual location of Area F. SE OU 2 ROD will document this decision.
LEAD-051	DEACTIVATION FURNACE	199108	The EA SI report No. 10559-23 November 1991 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/060-1.pdf (LKD.RT - 060).
LEAD-054	AMMUNITION BOX PILES	199105	The EA SI report No. 10559-23 November 1991 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/060-1.pdf (LKD.RT - 060).
LEAD-056	RESIDUE DRUM STORAGE, AMMUNITION AREA	199007	The EA SI report No. 10559-23 November 1991 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/060-1.pdf (LKD.RT - 060).
LEAD-057	WASTE OIL UST - AUTO SHOP, BUILDING 3238	199007	The EA SI report No. 10559-23 November 1991 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/060-1.pdf (LKD.RT - 060).
LEAD-058	CLASSIFIED PAPER INCINERATOR, BLDG. 1	199007	The EA SI report No. 10559-23 January 1995 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/102-1.pdf (LKD.RT - 102).
LEAD-061	ORE PILE LOCATIONS (DA AREA)	199407	The ESE SE OU 3 RI report ENAEC-IR-CR-93101 - June 1993 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/086-1.pdf (LKD.RT - 086).
LEAD-062	GUILFORD ALTERNATE WATER SYSTEM, OFFPOST	199407	The SHAW SE AREA RI report Off Post Groundwater - November 2004 closes this site out. Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/296.pdf (LKD.RT - 296).
LEAD-063	FIREMEN'S TRAINING AREA (1983)	199209	
LEAD-064	STORAGE AREA-BLDG 1467	200002	The DD which closed out PDO OU 3 was signed stating that -No Further Action is Planned- on February 16, 2000.
LEAD-065	BURIED DRUM SITE # 1	199501	Results of the investigation did not warrant any additional action. The RI report of the southeast area (June 1993) closes this site out. ESE produced this report. Report can be found on LEAD library site http://216.134.203.11/LETTERKENNYLIBRARY/ Document No. (LKD.RT - 060; page 8-64).
LEAD-067	ROCKY SPRING LAKE MERCURY	200002	DD - Mercury detection in Rocky Spring Lake; PDO - OU 3 area. February 2000

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			document closes out this site. Report can be found on LEAD library site http://216.134.203.11/LETTERKENNYLIBRARY/Document No. (LKD.RT - 167)
LEAD-068	ROWE SPRING	200409	On-post VOC contaminated groundwater has migrated off-post to residential wells and springs. All off post springs in the SE area related to Groundwater contamination (LEAD-068, 084, 086, 087, 088, 096 and 104) are currently funded under LEAD-076 (SEOU6). As a result the spring sites have been closed and will be addressed and funded under LEAD-076. RA for groundwater contamination is anticipated and will be addressed as part of source areas SEOU3 (LEAD081) and SEOU11 (LEAD131).
LEAD-069	CARTY WELL	200503	This site was closed in AEDB-R since all future work is being funded under LEAD-077 (PDO OU 2).
LEAD-070	ROCKY SPRING (MERCURY)	200002	DD - Mercury detection in Rocky Spring Lake; PDO - OU 3 area. February 2000 document closes out this site. Report can be found on LEAD library site http://216.134.203.11/LETTERKENNYLIBRARY/Document No. (LKD.RT - 167)
LEAD-071	ROWE RUN DRAINAGE FARM SAMPLING	199605	There was no definable pattern of elevated VOCs in tissues from the study area where groundwater is VOC contaminated compared with animals from the background area. April 1996 document closes out this site. The following final report documents the study results. Addendum to the RI of the southeast Area at LEAD - Rowe Run Farm Animal Products (Final Report). Report can be found on LEAD library site http://216.134.203.11/LETTERKENNYLIBRARY/Document No. (LKD.RT - 123)
LEAD-072	STORM WATER SEWERS	200507	The final ROD was signed June 2005. No further remedial action is planned.
LEAD-074	INDUSTRIAL SEWERS - IR	200509	Signed ROD August 2006 (Shaw Environmental) Report can be found on LEAD library site http://209.235.100.233/letterkennylibrary/Lib/docindex.htm Document No. (LKD.RT - 284)
LEAD-078	GROUNDWATER DIVIDE(MONITORING WELL 81-5)	200409	
LEAD-084	OFF SE RESIDENTIAL WELL STUDY (METALS)	200409	On-post contaminated groundwater has migrated off-post. Issue that some wells had elevated metal levels. It was proven that plumbing caused LEAD problem not Letterkenny. All future issues relating to

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			off-post SEOU6 Groundwater will carried under site LEAD-076. As a result this site has been closed and will be addressed and funded under site LEAD-076.
LEAD-086	HELMAN SPRING	200409	On-post VOC contaminated groundwater has migrated off-post to residential wells and springs. All off post springs in the SE area related to Groundwater contamination (LEAD-068, 084, 086, 087, 088, 096 and 104) are currently funded under LEAD-076 (SEOU6). As a result the spring sites have been closed and will be addressed and funded under LEAD-076. RA for groundwater contamination is anticipated and will be addressed as part of source areas SEOU3 (LEAD081) and SEOU11 (LEAD131).
LEAD-087	HELMAN SPRING EAST	200409	On-post VOC contaminated groundwater has migrated off-post to residential wells and springs. All off post springs in the SE area related to Groundwater contamination (LEAD-068, 084, 086, 087, 088, 096 and 104) are currently funded under LEAD-076 (SEOU6). As a result the spring sites have been closed and will be addressed and funded under LEAD-076. RA for groundwater contamination is anticipated and will be addressed as part of source areas SEOU3 (LEAD081) and SEOU11 (LEAD131).
LEAD-088	WITMER SPRING	200409	On-post VOC contaminated groundwater has migrated off-post to residential wells and springs. All off post springs in the SE area related to Groundwater contamination (LEAD-068, 084, 086, 087, 088, 096 and 104) are currently funded under LEAD-076 (SEOU6). As a result the spring sites have been closed and will be addressed and funded under LEAD-076. RA for groundwater contamination is anticipated and will be addressed as part of source areas SEOU3 (LEAD081) and SEOU11 (LEAD131).
LEAD-094	BUILDING 349, SUMP	200503	This site was closed in AEDB-R since all future work will be covered under LEAD-131 (SE OU 11).
LEAD-096	NELSON SPRING	200409	On-post VOC contaminated groundwater has migrated off-post to residential wells and springs. All off post springs in the SE area related to Groundwater contamination (LEAD-068, 084, 086, 087, 088, 096 and 104) are currently funded under LEAD-076 (SEOU6). As a result the spring sites have been closed and will be addressed and funded under LEAD-

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			076. RA for groundwater contamination is anticipated and will be addressed as part of source areas SEOU3 (LEAD081) and SEOU11 (LEAD131).
LEAD-097	ALLEN WELL	200503	This site was closed in AEDB-R since all future work will be covered under LEAD-077.
LEAD-098	ROCKY SPRING SPRINGHOUSE	200503	This site was closed in AEDB-R since all further work will be addressed under LEAD-107.
LEAD-104	NELSON SPRING EAST	200409	On-post VOC contaminated groundwater has migrated off-post to residential wells and springs. All off post springs in the SE area related to Groundwater contamination (LEAD-068, 084, 086, 087, 088, 096 and 104) are currently funded under LEAD-076 (SEOU6). As a result the spring sites have been closed and will be addressed and funded under LEAD-076. RA for groundwater contamination is anticipated and will be addressed as part of source areas SEOU3 (LEAD081) and SEOU11 (LEAD131).
LEAD-105	SPILL SITE WITHIN AREA A	200503	This site has been closed in AEDB-R since all funding and future actions related to this site are being covered under site LEAD-79.
LEAD-PBA	PBA	201303	

IRP Schedule

Date of IRP Inception: 197901

Past Phase Completion Milestones

1980

PA	(LEAD-068 - ROWE SPRING, LEAD-132 - Former Test Track/Soil Storage Area)
RFA	(LEAD-013 - IWTP LAGOONS/AREA D/BLDG 360)

1981

SI	(LEAD-061 - ORE PILE LOCATIONS (DA AREA), LEAD-084 - OFF SE RESIDENTIAL WELL STUDY (METALS), LEAD-086 - HELMAN SPRING, LEAD-087 - HELMAN SPRING EAST, LEAD-088 - WITMER SPRING, LEAD-096 - NELSON SPRING, LEAD-104 - NELSON SPRING EAST)
PA	(LEAD-061 - ORE PILE LOCATIONS (DA AREA), LEAD-063 - FIREMEN'S TRAINING AREA (1983), LEAD-084 - OFF SE RESIDENTIAL WELL STUDY (METALS), LEAD-086 - HELMAN SPRING, LEAD-087 - HELMAN SPRING EAST, LEAD-088 - WITMER SPRING, LEAD-096 - NELSON SPRING, LEAD-104 - NELSON SPRING EAST)

1986

PA	(LEAD-003 - BUILDING 1, LEAD-004 - BUILDING 350, LEAD-005 - BUILDING 351, LEAD-006 - BUILDING 370, LEAD-007 - BUILDING 349, LEAD-009 - CLAY LINED FTA (AREA B), LEAD-010 - OIL BURNING PIT, LEAD-015 - ACID BURNING PITS, LEAD-016 - COMBAT VEHICLE TEST TRACK, LEAD-017 - PROJECTILE RANGE, LEAD-018 - CS TEST SITE, LEAD-019 - WEAPONS STORAGE AREA, IGLOOS, LEAD-020 - BUILDING 11 STORAGE OF RAD ITEMS, LEAD-022 - BUILDING 3223 RAD DISPOSAL STORAGE, LEAD-024 - TWO REVETMENTS IN PDO AREA, LEAD-025 - PREVIOUS PESTICIDE AREA, BUILDING G, LEAD-028 - SMALL SEWAGE TREATMENT PLANT, LEAD-029 - ROCKY SPRING LAKE (VOC'S), LEAD-030 - DIGESTED SLUDGE SPREAD ON GROUND, LEAD-031 - BLDG 2357 LNDRY FOR ORDINANCE COMPOUNDS, LEAD-032 - INDUSTRIAL WASTE DITCH (ROWE RUN), LEAD-033 - SEDIMENT BURIAL SITE (AREA F), LEAD-035 - LANDFILL 1 (41-48) (AREAS H & I), LEAD-036 - LANDFILL 2 (48-52) (AREA J), LEAD-038 - LANDFILL 4 (56-64) (AREA C), LEAD-039 - LANDFILL 5 (64-?) (AREA G), SECURITY, LEAD-040 - OPEN TRENCH LANDFILL ADJ TO TBR, LEAD-041 - BURIAL AREA FOR BERYLLIUM PHOS TUBES, LEAD-044 - REVETTED AREA NORTH OF BURNING PITS, LEAD-048 - TRANSFER/BURNING REVETMENTS, LEAD-049 - OIL BURNING PIT USED IN 70'S (AREA E), LEAD-050 - TNT WASHOUT PLANT, LEAD-051 - DEACTIVATION FURNACE, LEAD-052 - DISPOSAL AREA TRENCHES (AREA K), LEAD-065 - BURIED DRUM SITE # 1, LEAD-067 - ROCKY SPRING LAKE MERCURY, LEAD-069 - CARTY WELL, LEAD-070 - ROCKY SPRING (MERCURY), LEAD-071 - ROWE RUN DRAINAGE FARM SAMPLING, LEAD-072 - STORM WATER SEWERS, LEAD-074 - INDUSTRIAL SEWERS - IR, LEAD-076 - SE OFFPOST GROUNDWATER - IR, LEAD-077 - PDO OFFPOST GROUNDWATER, LEAD-078 - GROUNDWATER DIVIDE(MONITORING WELL 81-5), LEAD-079 - WASTE DISPOSAL TRENCHES AREA A, LEAD-081 - SE ONPOST GROUNDWATER - IR, LEAD-083 - INDUSTRIAL WASTE SEWERS-SOILS - IR, LEAD-094 - BUILDING 349, SUMP, LEAD-097 - ALLEN WELL, LEAD-098 - ROCKY SPRING SPRINGHOUSE , LEAD-105 - SPILL SITE WITHIN AREA A, LEAD-106 - DRMO SCRAPYARD - PCB'S, METALS, ASBESTOS, LEAD-107 - ROCKY SPRING PCB SEDIMENTS, LEAD-131 - IWTP LAGOON GROUNDWATER, LEAD-PBA - PBA)
CS	(LEAD-013 - IWTP LAGOONS/AREA D/BLDG 360)
SI	(LEAD-003 - BUILDING 1, LEAD-004 - BUILDING 350, LEAD-005 - BUILDING 351, LEAD-006 - BUILDING 370, LEAD-007 - BUILDING 349, LEAD-009 - CLAY LINED FTA (AREA B), LEAD-010 - OIL BURNING PIT, LEAD-016 - COMBAT VEHICLE TEST TRACK, LEAD-017 - PROJECTILE RANGE, LEAD-018 - CS TEST SITE, LEAD-019 - WEAPONS STORAGE AREA, IGLOOS, LEAD-020 - BUILDING 11 STORAGE OF RAD ITEMS, LEAD-022 - BUILDING 3223 RAD DISPOSAL STORAGE, LEAD-024 - TWO REVETMENTS IN PDO AREA, LEAD-025 - PREVIOUS PESTICIDE AREA, BUILDING G, LEAD-028 - SMALL SEWAGE TREATMENT PLANT, LEAD-029 - ROCKY SPRING LAKE (VOC'S), LEAD-031 - BLDG 2357 LNDRY FOR ORDINANCE COMPOUNDS, LEAD-032 - INDUSTRIAL WASTE DITCH (ROWE RUN), LEAD-033 - SEDIMENT BURIAL SITE (AREA F), LEAD-035 - LANDFILL 1 (41-48) (AREAS H & I), LEAD-036 - LANDFILL 2 (48-52) (AREA J), LEAD-038 - LANDFILL 4 (56-64) (AREA C), LEAD-040 - OPEN TRENCH LANDFILL ADJ TO TBR, LEAD-041 - BURIAL AREA FOR BERYLLIUM PHOS TUBES, LEAD-044 - REVETTED AREA NORTH OF BURNING PITS, LEAD-048 - TRANSFER/BURNING REVETMENTS, LEAD-049 - OIL BURNING PIT USED IN 70'S (AREA E), LEAD-052 - DISPOSAL AREA TRENCHES (AREA K), LEAD-068 - ROWE SPRING, LEAD-070 - ROCKY SPRING (MERCURY), LEAD-071 - ROWE RUN DRAINAGE FARM SAMPLING, LEAD-078 - GROUNDWATER DIVIDE(MONITORING WELL 81-5), LEAD-079 - WASTE DISPOSAL TRENCHES AREA A,

	LEAD-083 - INDUSTRIAL WASTE SEWERS-SOILS - IR, LEAD-097 - ALLEN WELL, LEAD-098 - ROCKY SPRING SPRINGHOUSE , LEAD-105 - SPILL SITE WITHIN AREA A, LEAD-106 - DRMO SCRAPYARD - PCB'S, METALS, ASBESTOS, LEAD-107 - ROCKY SPRING PCB SEDIMENTS)
RI/FS	(LEAD-020 - BUILDING 11 STORAGE OF RAD ITEMS, LEAD-022 - BUILDING 3223 RAD DISPOSAL STORAGE, LEAD-031 - BLDG 2357 LNDRY FOR ORDINANCE COMPOUNDS)
1987	
RI/FS	(LEAD-063 - FIREMEN'S TRAINING AREA (1983))
RFI/CMS	(LEAD-013 - IWTP LAGOONS/AREA D/BLDG 360)
SI	(LEAD-069 - CARTY WELL)
1988	
PA	(LEAD-062 - GUILFORD ALTERNATE WATER SYSTEM, OFFPOST)
1989	
DES	(LEAD-013 - IWTP LAGOONS/AREA D/BLDG 360)
SI	(LEAD-077 - PDO OFFPOST GROUNDWATER, LEAD-081 - SE ONPOST GROUNDWATER - IR, LEAD-094 - BUILDING 349, SUMP, LEAD-131 - IWTP LAGOON GROUNDWATER, LEAD-132 - Former Test Track/Soil Storage Area)
1990	
PA	(LEAD-014 - BUILDING 3700 CHEMICAL LAB SS, LEAD-042 - NEUTRALIZATION PIT, LEAD-043 - RESIDUE BURIAL SITE (SWMU 57), LEAD-045 - DEMO GROUND 1, LEAD-046 - DEMO GROUND 2, LEAD-047 - BURNING GROUND 1 (SWMU 56), LEAD-053 - BURNING GROUND 2 (SWMU 58), LEAD-054 - AMMUNITION BOX PILES, LEAD-056 - RESIDUE DRUM STORAGE, AMMUNITION AREA, LEAD-057 - WASTE OIL UST - AUTO SHOP, BUILDING 3238, LEAD-058 - CLASSIFIED PAPER INCINERATOR, BLDG. 1)
RI/FS	(LEAD-024 - TWO REVETMENTS IN PDO AREA)
SI	(LEAD-056 - RESIDUE DRUM STORAGE, AMMUNITION AREA, LEAD-057 - WASTE OIL UST - AUTO SHOP, BUILDING 3238, LEAD-058 - CLASSIFIED PAPER INCINERATOR, BLDG. 1, LEAD-072 - STORM WATER SEWERS)
1991	
SI	(LEAD-014 - BUILDING 3700 CHEMICAL LAB SS, LEAD-015 - ACID BURNING PITS, LEAD-043 - RESIDUE BURIAL SITE (SWMU 57), LEAD-045 - DEMO GROUND 1, LEAD-047 - BURNING GROUND 1 (SWMU 56), LEAD-051 - DEACTIVATION FURNACE, LEAD-054 - AMMUNITION BOX PILES)
RD	(LEAD-063 - FIREMEN'S TRAINING AREA (1983))
PA	(LEAD-064 - STORAGE AREA-BLDG 1467)
RA(C)	(LEAD-063 - FIREMEN'S TRAINING AREA (1983))
1992	
IRA	(LEAD-062 - GUILFORD ALTERNATE WATER SYSTEM, OFFPOST)
RI/FS	(LEAD-052 - DISPOSAL AREA TRENCHES (AREA K))
SI	(LEAD-030 - DIGESTED SLUDGE SPREAD ON GROUND, LEAD-064 - STORAGE AREA-BLDG 1467, LEAD-067 - ROCKY SPRING LAKE MERCURY)
1993	
SI	(LEAD-074 - INDUSTRIAL SEWERS - IR, LEAD-076 - SE OFFPOST GROUNDWATER - IR)
RD	(LEAD-052 - DISPOSAL AREA TRENCHES (AREA K))
RI/FS	(LEAD-025 - PREVIOUS PESTICIDE AREA, BUILDING G, LEAD-035 - LANDFILL 1 (41-48) (AREAS H & I))
CMI(C)	(LEAD-013 - IWTP LAGOONS/AREA D/BLDG 360)
1994	
RI/FS	(LEAD-003 - BUILDING 1, LEAD-004 - BUILDING 350, LEAD-005 - BUILDING 351, LEAD-006 - BUILDING 370, LEAD-007 - BUILDING 349, LEAD-032 - INDUSTRIAL WASTE DITCH (ROWE RUN), LEAD-038 - LANDFILL 4 (56-64) (AREA C), LEAD-041 - BURIAL AREA FOR BERYLLIUM PHOS TUBES, LEAD-061 -

	ORE PILE LOCATIONS (DA AREA), LEAD-062 - GUILFORD ALTERNATE WATER SYSTEM, OFFPOST)
1995	
SI	(LEAD-039 - LANDFILL 5 (64-?) (AREA G), SECURITY, LEAD-042 - NEUTRALIZATION PIT, LEAD-046 - DEMO GROUND 2, LEAD-050 - TNT WASHOUT PLANT, LEAD-053 - BURNING GROUND 2 (SWMU 58), LEAD-065 - BURIED DRUM SITE # 1)
1996	
RFA	(LEAD-112 - AMMUNITION DRUM PADS)
IRA	(LEAD-079 - WASTE DISPOSAL TRENCHES AREA A)
RI/FS	(LEAD-071 - ROWE RUN DRAINAGE FARM SAMPLING)
1997	
IRA	(LEAD-032 - INDUSTRIAL WASTE DITCH (ROWE RUN), LEAD-074 - INDUSTRIAL SEWERS - IR, LEAD-083 - INDUSTRIAL WASTE SEWERS-SOILS - IR, LEAD-105 - SPILL SITE WITHIN AREA A)
1998	
RA(C)	(LEAD-052 - DISPOSAL AREA TRENCHES (AREA K))
1999	
CS	(LEAD-112 - AMMUNITION DRUM PADS)
IRA	(LEAD-010 - OIL BURNING PIT)
2000	
IRA	(LEAD-106 - DRMO SCRAPYARD - PCB'S, METALS, ASBESTOS, LEAD-107 - ROCKY SPRING PCB SEDIMENTS)
RI/FS	(LEAD-064 - STORAGE AREA-BLDG 1467, LEAD-067 - ROCKY SPRING LAKE MERCURY, LEAD-070 - ROCKY SPRING (MERCURY))
2001	
IRA	(LEAD-036 - LANDFILL 2 (48-52) (AREA J))
2004	
RI/FS	(LEAD-033 - SEDIMENT BURIAL SITE (AREA F), LEAD-049 - OIL BURNING PIT USED IN 70'S (AREA E), LEAD-068 - ROWE SPRING, LEAD-078 - GROUNDWATER DIVIDE(MONITORING WELL 81-5), LEAD-084 - OFF SE RESIDENTIAL WELL STUDY (METALS), LEAD-086 - HELMAN SPRING, LEAD-087 - HELMAN SPRING EAST, LEAD-088 - WITMER SPRING, LEAD-096 - NELSON SPRING, LEAD-104 - NELSON SPRING EAST)
2005	
RI/FS	(LEAD-016 - COMBAT VEHICLE TEST TRACK, LEAD-069 - CARTY WELL, LEAD-072 - STORM WATER SEWERS, LEAD-074 - INDUSTRIAL SEWERS - IR, LEAD-083 - INDUSTRIAL WASTE SEWERS-SOILS - IR, LEAD-094 - BUILDING 349, SUMP, LEAD-097 - ALLEN WELL, LEAD-098 - ROCKY SPRING SPRINGHOUSE , LEAD-105 - SPILL SITE WITHIN AREA A, LEAD-106 - DRMO SCRAPYARD - PCB'S, METALS, ASBESTOS)
2008	
IRA	(LEAD-039 - LANDFILL 5 (64-?) (AREA G), SECURITY, LEAD-048 - TRANSFER/BURNING REVETMENTS)
2012	
RI/FS	(LEAD-039 - LANDFILL 5 (64-?) (AREA G), SECURITY, LEAD-050 - TNT WASHOUT PLANT, LEAD-053 - BURNING GROUND 2 (SWMU 58))

Projected Phase Completion Milestones

See attached schedule

IRP Schedule

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

Site ID	Site Name	ROD/DD Title	ROD/DD Date
LEAD-081	SE ONPOST GROUNDWATER - IR	ROD,SE OU 3A SE Onpost Groundwater - IR	20130630
LEAD-087	HELMAN SPRING EAST	ROD, SE OU 6 Offpost Groundwater	20130630
LEAD-096	NELSON SPRING	ROD, SE OU 6 Offpost Groundwater	20130630
LEAD-104	NELSON SPRING EAST	ROD, SE OU 6 Offpost Groundwater	20130630
LEAD-088	WITMER SPRING	ROD, SE OU 6 Offpost Groundwater	20130630
LEAD-029	ROCKY SPRING LAKE (VOC'S)	ROD, PDO OU 2 Rocky Spring (VOC)	20130930
LEAD-077	PDO OFFPOST GROUNDWATER	ROD, PDO OU 2 Rocky Spring (VOC)	20130930
LEAD-044	REVETTED AREA NORTH OF BURNING PITS	PDO OU 4 - OIL BURN PIT, LEAD-010	20130601
LEAD-040	OPEN TRENCH LANDFILL ADJ TO TBR	PDO OU 4 - OIL BURN PIT, LEAD-010	20130601
LEAD-048	TRANSFER/BURNING REVETMENTS	PDO OU 4 - OIL BURN PIT, LEAD-010	20130601
LEAD-010	OIL BURNING PIT	PDO OU 4 - OIL BURN PIT, LEAD-010	20130601
LEAD-112	AMMUNITION DRUM PADS	PDO OU 4 - OIL BURN PIT, LEAD-010	20130601
LEAD-131	IWTP LAGOON GROUNDWATER	ROD, SE OU 11 IWTP Lagoon Groundwater	20130630
LEAD-106	DRMO SCRAPYARD - PCB'S, METALS, ASBESTOS	DD, DRMO Scrapyard, PCB's	20130930
LEAD-107	ROCKY SPRING PCB SEDIMENTS	ROD, PDO OU 5 Rocky Spring PCB Sediments	20130930
LEAD-098	ROCKY SPRING SPRINGHOUSE	ROD, PDO OU 5 Rocky Spring PCB Sediments	20130930
LEAD-098	ROCKY SPRING SPRINGHOUSE	ROD, SE OU 9 Landfill 2 (48-52) - Area J	20140330
LEAD-036	LANDFILL 2 (48-52) (AREA J)	ROD, SE OU 9 Landfill 2 (48-52) - Area J	20140330
LEAD-009	CLAY LINED FTA (AREA B)	ROD, SE OU 5, Areas A & B	20130930
LEAD-105	SPILL SITE WITHIN AREA A	ROD, SE OU 5, Areas A & B	20130930
LEAD-079	WASTE DISPOSAL TRENCHES AREA A	ROD, SE OU 5, Areas A & B	20130930

Final RA(C) Completion Date: 201509

Schedule for Next Five-Year Review: 2017

Estimated Completion Date of IRP at Installation (including LTM phase): 204601

LETTERKENNY ARMY DEPOT IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
LEAD-009	CLAY LINED FTA (AREA B)	RI/FS	■					
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
LEAD-010	OIL BURNING PIT	RI/FS	■					
		RD	■	■				
		RA(C)		■				
		RA(O)			■	■	■	■
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
LEAD-029	ROCKY SPRING LAKE (VOC'S)	RD	■					
		RA(C)	■					
		RA(O)	■	■	■	■	■	■
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
LEAD-036	LANDFILL 2 (48-52) (AREA J)	RI/FS	■					
		RD		■				
		RA(C)		■				
		RA(O)			■	■	■	■
		LTM						■
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
LEAD-039	LANDFILL 5 (64-?) (AREA G), SECURITY	RA(C)	■					
		LTM	■	■	■	■	■	■
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
LEAD-040	OPEN TRENCH LANDFILL ADJ TO TBR	RI/FS	■					
		RD	■	■				
		RA(C)		■				
		LTM			■	■	■	■
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
LEAD-044	REVETTED AREA NORTH OF BURNING PITS	RI/FS	■					
		RD	■					
		RA(C)	■	■				
		LTM		■	■	■	■	■
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
LEAD-048	TRANSFER/BURNING REVETMENTS	RI/FS	■					
		RD	■					
		RA(C)	■	■				
		LTM		■	■	■	■	■
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
LEAD-050	TNT WASHOUT PLANT	LTM	■	■	■	■	■	■
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
LEAD-052	DISPOSAL AREA TRENCHES (AREA K)	LTM	■	■	■	■	■	■
SITE ID	**SITE NAME**	**PHASE**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19+**
LEAD-053	BURNING GROUND 2 (SWMU 58)	LTM	■	■	■	■	■	■

LETTERKENNY ARMY DEPOT IRP Schedule

SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
LEAD-076	SE OFFPOST GROUNDWATER - IR	RI/FS	■					
		RD	■					
		RA(C)	■	■				
		RA(O)		■	■	■	■	
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
LEAD-079	WASTE DISPOSAL TRENCHES AREA A	RI/FS	■					
		RD		■				
		RA(C)		■				
		LTM		■	■	■	■	■
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
LEAD-081	SE ONPOST GROUNDWATER - IR	RI/FS	■					
		RD	■					
		RA(C)		■				
		RA(O)		■	■	■	■	■
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
LEAD-083	INDUSTRIAL WASTE SEWERS-SOILS - IR	LTM	■	■	■	■	■	■
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
LEAD-106	DRMO SCRAPYARD - PCB'S, METALS, ASBESTOS	LTM	■	■	■	■	■	
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
LEAD-107	ROCKY SPRING PCB SEDIMENTS	RD	■					
		RA(C)	■					
		RA(O)		■	■	■	■	■
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
LEAD-112	AMMUNITION DRUM PADS	RFI/CMS	■					
		DES	■					
		CMI(C)	■	■				
		LTM		■	■	■	■	■
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
LEAD-131	IWTP LAGOON GROUNDWATER	RI/FS	■					
		RD	■					
		IRA	■					
		RA(C)		■				
		RA(O)		■	■	■	■	
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
LEAD-132	Former Test Track/Soil Storage Area	RI/FS	■					
		RD	■	■				
		RA(C)	■	■				
		LTM		■	■	■	■	■

Community Involvement

Technical Review Committee (TRC): 198801

Community Involvement Plan (Date Published): 200809

Restoration Advisory Board (RAB): RAB established 199605

RAB Adjournment Date: N/A
RAB Adjournment Reason: None

Additional Community Involvement Information

In 1988, the LEAD TRC was formed to help keep the local community informed of the environmental cleanup efforts at LEAD and to provide a forum for cooperation between the depot and concerned local officials and citizens. The TRC membership represented a cross section of the community as well as Army and regulatory agencies who met several times a year to discuss ongoing and planned cleanup activities.

In May 1996, the LEAD TRC was expanded into a new citizen-government advisory panel called a RAB. DoD guidance states that a RAB must be established at all installations slated for downsizing or closure where property will be turned over to the local community under the BRAC process. A RAB is a citizen/government panel intended to bring together people who reflect the diverse interests within the community. The RAB members participate in the process by reviewing cleanup plans, exchanging information and ideas, and providing advice to government decision-makers on environmental issues facing Letterkenny.

The RAB meetings are held once every six months at 6:00 p.m. in the LEAD Bldg 14 conference room. All RAB meetings are open to the public. The RAB has 13 members who are kept posted by articles in local newspapers and given access to all remediation reports. The current RAB members have not shown an interest in participating in the TAPP program.

The community relations plan was last revised and published in September 2008 (Letterkenny Administrative Record Report No. LKD.RT-315).

Administrative Record is located at

The Administrative Record is located at Building 14 in the Environmental Office (Library)
1 Overcash Avenue
Chambersburg, PA 17201
717-267-8368

Information Repository is located at

The Information Repository is located at the following website:
http://www.leadenv.com/leadenv/

Current Technical Assistance for Public Participation (TAPP): N/A

TAPP Title: N/A

Potential TAPP: N/A